

ADVANCED PLACEMENT PARTICIPATION: AN EXAMINATION OF THE
FACTORS THAT INFLUENCE STUDENT CHOICE

A DISSERTATION
SUBMITTED TO THE GRADUATE SCHOOL
IN PARTIAL FULFILLMENT OF THE REQUIREMENTS
FOR THE DEGREE
DOCTOR OF EDUCATION

BY
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BALL STATE UNIVERSITY

MUNCIE, INDIANA

MAY 2017

DEDICATION

To my husband, Ryan ~

your love and unwavering support is unmatched in this world

To my daughters, Indira and Izzie ~

know that with passion and perseverance, you can achieve anything

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I would like to thank my husband, Ryan, and my daughters, Indira and Izzie, for their support during this long journey. They have been my greatest champions and sacrificed countless hours to allow me to conduct my research and write my dissertation.

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ABSTRACT

DISSERTATION: Advanced Placement Participation: Examining the Factors that Influence Student Choice

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Racial, socioeconomic, and gender gaps exist in Advanced Placement course participation, despite the consistent increase in availability. Several studies have shown that student demographic backgrounds, along with factors, such as attainment value and self-concept of ability, can influence a student's decision to pursue the AP pathway. This dissertation examines the racial, socioeconomic, and gender gaps present in Advanced Placement class participation in a large Indiana high school and attempts to describe why certain demographic groups opt to participate in AP classes and others do not. The perceived academic benefit of AP classes in reference to students' motivational patterns, as well as other potential factors of influence, was researched through surveys and interviews. It is apparent that students, despite their demographics, are subject to an assortment of influences, both internal and external, while in high school. When removing the demographic groups and focusing only on motivational patterns, three constructs test at the significant level for predicting AP participation: expectations, self-concept of ability, and utility value. Of the demographic groups, only race was shown to have an effect on AP participation for students who identified as either White or

Hispanic. Students participating in AP classes in Indiana follow the national trends reported by College Board. The majority of students are White and female and do not qualify for free or reduced lunch at school per federal regulation guidelines.

Keywords: expectancy-value theory, influence, Advanced Placement, participation

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CHAPTER ONE: INTRODUCTION

The issue of racial, socioeconomic, and gender disparities in the American educational system has been a constant focus of research since the days of Horace Mann and his commitment to the Common School ideology. While the landscape of education has changed noticeably from the 1830's and 40's, these disparities still exist in school districts across the United States. Specific to the secondary school level, recent research has focused on racial, socioeconomic, and gender inequalities within the Advanced Placement Program offered at most American high schools. Reports published by College Board (2015a; 2014b) acknowledge these disparities but offer little solace or guidance for participating high schools working to close these gaps. Traditionally, College Board's main concern was the continuing racial inequities among program participants. In 2014, the concern expanded to include income inequities as parental income predicted children's academic success (2014b). Gender equity gaps have yet to be included in College Board research and reports, but several studies examine this issue within the context of race and socioeconomic status (College Board, 2015c; Fatum, 2013; Moller & Stearns, 2012; Corra, Carter, & Carter, 2011; Conger, Long, & Iatarola, 2009; Hubbard, 2005).

Problem Statement

Racial, socioeconomic, and gender gaps exist in Advanced Placement course participation (College Board, 2014a; College Board, 2014b; Fatum, 2013; Moller & Stearns, 2012; Corra, Carter, & Carter, 2011; Conger, Long, & Iatarola, 2009; Hubbard, 2005). Although the AP program has increased nationally in availability, these gaps

remain prevalent in American high schools. Several factors may influence students' participation in AP courses, such as parent expectations, school expectations, government incentives, and intrinsic motivation. Information on the degree to which these factors influence students' AP participation choices is scarce and typically limited to a selected population. It is also unclear how some high schools maintain more equitable AP enrollment, while others continue to struggle.

Purpose of Study

The two main purposes of this study are to determine the effects of demographic variables and the reasons for AP participation. Specifically, this study examines the differences in Advanced Placement class participation in a large Indiana high school by race, socioeconomic status, and gender. Additionally, the study describes the reasons certain demographic groups in high schools may choose to not participate in the Advanced Placement program even though their ability levels would suggest a successful outcome. Several ideas will be discussed in an attempt to further explore these ideas. The concept of academic value will be reviewed within the context of Expectancy Value Theory (attainment value, intrinsic value, cost, and utility value) and three additional motivation paradigms (social consequence, expectations, self-concept of ability). The effects of government policies and incentives on school expectations within the context of school decisions regarding AP program promotion and offerings will also be reviewed. In addition, the area of socioeconomic status will be utilized to explore why an achievement gap exists among socioeconomic peers and to identify possible explanations of this occurrence. It is my expectation to identify several Indiana high schools that are successfully minimizing, or unsuccessfully minimizing, the racial, socioeconomic, and

gender gap in AP participation. Leadership practices of personnel in schools will be identified and analyzed to better understand the promotion strategies for Advanced Placement participation and success.

Significance of the Study

Under the constant push for schools to provide students with high-quality, rigorous educational opportunities, the Advanced Placement Program provides an appropriate and important option to students. Increasing the availability of the program, however, has not yielded expectation participation results (Rothschild, 1999; Schneider, 2009). The continued presence of equity gaps within the Advanced Placement program makes this study significant. *The 10th Annual Report to the Nation* clearly illustrates the growing trend of AP course enrollment in addition to the continued imbalance of demographic groups participating in these classes (College Board, 2014b). In addition to race, students classified as low income are also underrepresented in the Advanced Placement program. To date, no state has been able to eliminate the equity gap in either area. Several studies, however, confirm that low-income is a crucial factor in low minority AP participation (Klugman, 2013; York, 2012; Pizzolato, Brown, & Kanny, 2011; Lipp, 2011; Moore & Slate, 2008; Klopfenstein, 2004). Missing from the research is a complete picture of socioeconomic disadvantage among all racial groups. Frequently, only minority groups are studied, leaving out a critical piece of research regarding the low-income White student.

The role gender plays in Advanced Placement participation is often a secondary thought in the equity gap conversation. Studies that do address the issue typically do not discuss the gender gap in reference to race or socioeconomic status, keeping it a separate

entity and offering little insight on the statistics (Fatum, 2013). Research consistently confirms that more females participate in AP classes than males, but performance reports by gender are mixed (Nord et al, 2011; Corra, Carter, & Carter, 2011; Adelabu, 2007; Hubbard, 2005). More information is needed regarding gender gaps within race and socioeconomic status.

Through examining the patterns of racial, socioeconomic, and gender gaps in Indiana high schools, this study will provide an in-depth school-specific assessment, which attempts to identify the influences in a large Indiana high school that demonstrates a large equity gap. This study will also investigate which factors influence students' AP participation choices and suggest potential avenues to promote the Advanced Placement program to the underserved population. Describing the promotion practices of personnel within school buildings will assist administrators in avoiding practices that undermine a culture of high expectations in learning.

Research Questions

It is difficult to conduct research in the field of education without discussing the pattern of demographic disparities in school participation and achievement. Race, socioeconomic status, and gender are the three main groups that are consistently identified as variables contributing to the achievement gap (Klopfenstein, 2004; Ogbu, 2003; Corra, Carter, & Carter, 2011; Adelabu, 2007; Fowler, 2013; Aud, Fox, & Kewal Ramani, 2010; Ndura, Robinson, & Ochs, 2011). As such, three main research questions will be considered throughout this study. Within the context of these main questions, several specific queries will also be addressed.

1. How does student participation compare within and among each demographic group (i.e., SES, gender, and/or race)?
2. To what extent do students' demographic backgrounds and/or motivational patterns predict AP participation?
3. What are the different strategies stakeholders have taken to influence and promote AP participation among all racial, socioeconomic, and gender groups?

Aligning these questions to current literature addresses several key components concerning the Advanced Placement Program. Perspectives presented in this review will include parental and school personnel influence on student choice, as well as the role of Expectancy Value components and three additional motivational constructs. The lack of academic value in urban schools despite rising AP enrollment numbers and determinants of course offerings, including government influence and policy, will also be discussed within the context of each of these areas. Each perspective demonstrates a unique but substantial component of the cycle of inequity within the AP Program, which needs significant attention to resolve.

Delimitations

This study is delimited to students, age 18 and older, in grade 12 attending high school in the State of Indiana. Archival data obtained from the Indiana Department of Education provided a large, unbiased sampling of all AP participants within the state (James, personal communication, 2016). AP participants outside the State of Indiana are excluded from this study. Racial groupings within the archived data are defined as White, Black/African American, Hispanic, Asian/Asian American/Pacific Islander, and

Native American/Alaska Native, excluding multiracial participants. Additionally, low-income status is based on free or reduced lunch eligibility per federal guidelines and does not address other levels of socioeconomic status. Survey and interview results are delimited to volunteer participants. All others will be excluded.

Assumptions

The following assumptions will be employed for this study:

1. Survey responses will be honest and reflect current thinking of students, parents or guardians, and school personnel.
2. The sample school will be representative of other Indiana high schools with similar equity gap percentages.
3. The sample will be representative of students in grades 9, 10, and 11 within the same high school.

Definition of Terms

Several terms will be employed throughout this dissertation to address specific groups, theories, and ideas to address the proposed research questions. The following list provides a clear definition of each term, as well as, how it will be applied within the study.

- *Ability* – “the basic capacity to carry out a behavior” (Perkins, Tishman, Ritchhart, Donis, & Andrade, 2000, p. 273)
- *Academic Value* refers to the received benefit of Advanced Placement as it pertains to an individually perceived level of challenge or the college admissions process (Wildhagen, 2013; Hertberg-Davis & Callahan, 2008; Corra, Carter, & Carter, 2011).

- *Acting White* refers to the stereotype that African American students who participate in Advanced Placement classes are pursuing a path that is outside of their culture (Tucker, 2008; Ogbu, 2003).
- *Advanced Placement (AP)* is a “rigorous academic program built on the commitment, passion, and hard work of students,” developed by the College Board in 1955 (2015). These college-level classes are offered in several subjects, culminating with an exam in May.
- *Advanced Placement (AP) exam* occurs at the conclusion of an AP class. Schools participating in the AP program must administer the appropriate subject exam at the specific time determined by the College Board, typically in May. Exams are scored on a 5-point scale, with 1 being the lowest score. Students earning a 3 or higher may be eligible for college credit (College Board, 2015a).
- *Attainment Value* is the perceived importance of a task for identity or self (Eccles, 1983).
- *College Board* is an organization that produces and scores standardized exams for college readiness, including AP, SAT, and ACT (2015a).
- *College credit* refers to the number of hours awarded to an individual based on their AP exam score (College Board, 2015a; Schneider, 2009). This differs among colleges and universities.
- *College-preparatory track* is an educational pathway designed to prepare students for college. Typically, students on this track are ability-grouped, and courses are more challenging (Moller & Stearns, 2012).

- *Credential* is defined as a “tangible benefit” for the purpose of this study (Hertberg-Davis & Callahan, 2008).
- *Critical Race Theory (CRT)* addresses the presence of racism in everyday life. Derived through law, this theory drives current pedagogy to work for social justice in education (Beachum, 2013).
- *Disadvantaged* is used synonymously with *minority*, *poverty*, and *low-income*.
- *Education track* refers to the classes an individual is encouraged to take to earn a high school degree (Klugman, 2013; York, 2012)
- *Equity* refers to the relationship between the number of total graduates of a school year compared to the number of participants (College Board, 2014b).
- *Equity gap* addresses the relationship between the number of AP exam participants and a particular race, gender, or socioeconomic status (College Board, 2014b). The closer these two numbers are, the smaller the equity gap.
- *Eurocentric education* is curricula designed from the White perspective, ignoring minority cultures (Tucker, 2008; Ogbu, 2003).
- *Expectancy Theory* or *Expectancy-Valence Theory* was developed to explain why individuals make certain choices in their lives and originally applied to the business work force (Vroom, 1964).
- *Expectancy-Value Theory* – Choices are influenced by individual expectancies, values, and outcome expectations, and are “assumed to directly influence performance, persistence, and task choice” (Eccles & Wigfield, 2002). The four components of EVT are attainment value, intrinsic value, utility value, and cost.
- *Gender* is reported as male or female and does not address any potential

subgroups pertaining to gender identification. It is assumed that datasets reflect the gender specified in the official school record.

- *Graduating class* refers to the group of students expected to graduate in a given year.
- *Immigrant minority* refers to non-native individuals who chose to relocate to the United States (Ogbu, 2003).
- *Incentives* refer to federal or state financial offers to either a school or individual based on AP offerings and participation (Holdstead, Spradlin, McGillivray, & Burroughs, 2011).
- *Indiana Department of Education* is the state organization that creates, implements, and improves education policy in the State of Indiana.
- *Influence* refers to the capacity effect of an internal or external force on decision-making for the purposes of this study.
- *Intrinsic motivation* is the selection of an activity because one enjoys it (Wigfield & Eccles, 2000).
- *Labor market outcomes* denote the link between education level, income, and success in the workforce (Flowers, 2008).
- *Low-income* is defined by free and reduced lunch eligibility requirements established by the federal government (College Board, 2014b).
- *Minority* refers to the following demographic groups as a collective: Black/African American, Hispanic, Asian/Asian-American/Pacific Islander, and Native American/Alaska Native. In addition, it is understood that the main comparative group is White/Caucasian. (Also see *underrepresented*.)

- *Non-immigrant minority* refers to non-native individuals who were involuntarily relocated to the United States (Ogbu, 2003).
- *Non-standardized credentials* are supplemental activities, such as AP participation, which are weighted in the college admissions process and do not yield the same results among demographic groups (NACAC, 2009; Wildhagen, 2013).
- *Participation* - Any reference to AP course *participation* assumes students completed the class and participated in the accompanying exam, unless otherwise noted.
- *Policy* refers to federal, state, or local mandates which influence if a school offers AP classes, as well as, how many they offer.
- *Poverty* is the comparison of income to need (U.S. Census Bureau, 2015). If a family's need is greater than their income, they are considered to have an income deficit and at poverty level.
- *Prerequisite* is the requirement that must be met prior to enrolling in specific AP classes or being awarded a post-secondary scholarship (Holstead, Spradlin, McGillivray, & Burroughs, 2010).
- *Privileged* refers to members of a high socioeconomic status that is defined by the context of the example in which it is mentioned. As such, *privileged* may be applied to a general populace that is not considered low-income or used to refer to the non-minority group.
- *Race* refers to the following demographic groups as reported by the College Board and the Indiana Department of Education: White, African American,

Hispanic, Asian/Asian American/ Pacific Islander, and American Indian/Native Alaskan (2014b).

- *Self-concept of ability* refers to one's self-concept of how competent one is at a particular task, either individually or compared to others, as well as how successful one thinks he or she will be in the chosen activity (Eccles & Wigfield, 2002; Yoon, Eccles, & Wigfield, 1996).
- *Self-perception* is how one thinks of oneself (Rosman & Mayer, 2015).
- *Shaker Heights* is a study conducted in Ohio by John Ogbu that focused on the achievement gap between White and African Americans students despite living in the same affluent community (Ogbu, 2003).
- *Social consequence* is the idea that decisions are made based on a person's interpretation of how it will be viewed, both positively and negatively, by those within his or her social community (Eccles, 1985; Ogbu, 2003; Corra, Carter, & Carter, 2011).
- *Socioeconomic status* information is based on free and reduced lunch qualification factors per federal regulation guidelines and identified as "low-income."
- *Standardized credentials* are those factors, or considerations, in the college admissions process that result in equal distribution among demographic groups (Wildhagen, 2013).
- *Underrepresented* - Unless otherwise specified, the term *underrepresented* will refer to the following demographic groups as a collective: Black/African American, Hispanic, Asian/Asian-American/Pacific Islander, and Native

American/Alaska Native. In addition, it is understood that the main comparative group is White/Caucasian.

- *Utility Value* is the usefulness or relevance of a task (Eccles, 1983).

Summary

The existence of inequity within the Advanced Placement program has been well established through decades of research. A continuing problem within the program is the lack of information available on why certain students are participating in AP classes and others are not. This study provides answers to the current equity gap trends concerning participation in AP programs in selected Indiana high schools for the purpose of improving program promotion and student participation. Chapter 2 will provide the context of this study through an examination of historical and recent trends in reference to racial, socioeconomic, and gender equity gaps in the Advanced Placement program. Methodology for this study is outlined in chapter three, using the explanatory sequential mixed-methods approach (Creswell, 2014). Chapter four will provide the analysis for my study, while chapter five will provide a summary of the study and explore future implications in the educational field.

CHAPTER TWO – LITERATURE REVIEW

Racial, socioeconomic, and gender gaps have plagued the Advanced Placement Program since its origin in 1955. Originally intended to provide a much-needed challenge to the academically talented high school students, the AP program simultaneously created a divide between schools that could consistently offer these advanced classes and those who could not (Schneider, 2009). Over the past 60 years, this divide has continued to grow and evolve (Fowler, 2013; Schneider, 2009; Rothschild, 1999).

Officially launched by College Board in 1955, the AP Program quickly became a subject of interest in educational research through its pilot programs at the nation's best high schools, which were selected based on their academic rigor and connection to Ivy League universities, resulting in the exclusion of urban schools (Schneider, 2009). The selection process of students allowed to participate in the Advanced Placement courses varied among states and content area (Franklin, 1965; Rothschild, 1999). Schools relied on a variety of factors, including teacher recommendations, IQ scores, state exam scores, reading levels, personal interviews, and parent permission to aid with student selection. Certain AP classes required prerequisites, while others did not, resulting in some schools offering higher-level classes at an earlier age to protect the four-year high school experience. While viewed as providing the much-needed challenge for academically gifted students, the program was only accessible in 9% of schools that qualified to offer the advanced courses at that time.

As the Advanced Placement program continued to grow in popularity, the classes became synonymous with prestige and privilege. Despite its original purpose to both

challenge high functioning students and to aid them with post-secondary school admissions into prominent universities, inequities began to emerge in areas where advanced placement courses could not be consistently offered, or offered at all. Urban areas fought for financial assistance to offer Advanced Placement classes. While the courses became more readily available, the overall value (in terms of exclusivity) of these classes began to weaken. Students from varied backgrounds were now able to compete with the elite high school graduates for college admission spots, and more universities began accepting the classes for college credit (Rothschild, 1999; Schneider, 2009). The field became saturated, and many of the initial pilot high schools dropped the classes entirely. Further, several prominent universities no longer considered the classes prestigious when listed on admissions applications (Schneider, 2009). By 1976, AP enrollment had reached 75,651 students – a number that far exceeded the predicted 5,000 (Schneider, 2009; Franklin, 1965).

The release of *A Nation at Risk* in 1983 catapulted education into the national spotlight, accusing American schools of failing students by providing lackluster educational experiences and demanded schools set higher standards (National Commission on Excellence in Education). Another publication, entitled *High School: A Report on Secondary Education in America*, was also released at this time and urged schools to promote programs such as Advanced Placement to help “break the bureaucratic barriers and develop flexible arrangements for students as they move from one level to another” (Boyer, 1983, p. 363). Yet, the College Board continued to promote its program unchanged, with the exception of a few additional subject exams, rather than unveil a new program design (Schneider, 2009; Rothschild, 1999). By 1985, more than

200,000 students in 7,201 schools were participating in AP courses (Rothschild, 1999). This growth trend continued into the 1990's, with a 7% increase in minority participants (Schneider, 2009). States began utilizing the program as part of their improvement plans for education, and the federal government offered to subsidize exam fees for low-income populations (Schneider, 2009; Rothschild, 1999).

Program participation has continued to rise since 2000, but critics question the standard of AP courses now offered in American high schools (Schneider, 2009). Student selection criteria still varies among schools, if a selection process exists at all. While all schools offering AP classes must meet content criteria established by the College Board, not all require participation in the culminating exam. As a result, many colleges either place less value on AP coursework as the main indicator for student success or require an exam score of 4 or 5 (Klopfenstein & Thomas, 2010; Schneider, 2009).

Despite these potential setbacks, however, in 2013, over one million student examinees were enrolled in the AP program at their respective high schools, participating in just over three million exams (College Board, 2014b). This continued growth might be puzzling to those who question the academic value of the AP credential, disagree with governmental influence regarding program availability, or lament the enrollment disparities. Each of these areas will be discussed in more detail in future sections of this chapter.

Methodology of Review

I conducted searches for articles via online databases accessible through Bracken Library at Ball State University. Within this system, Web of Science, ERIC

(EBSCOhost), Sociological Abstracts, Academic Search Premier, PsycINFO, and WorldCat were used to locate peer-reviewed articles, doctoral dissertations, and books within a parameter of keywords. Attention was given to resources based on relevance and times cited. Articles, dissertations, and books, which contained keywords within the title, were reviewed prior to those resources with keywords in the abstract. In addition, references outside of five years were considered to gain historical perspectives and provide additional research in the area of study.

Keywords used in the search included *advanced placement and racial disparities; AP and Indiana; gifted and advanced placement; advanced placement and high school or secondary education; advanced placement, high school and disparities; advanced placement, high school, and race; advanced placement and race; advanced placement and SES; advanced course and race; advanced placement and minority; advanced course and secondary education; AP and race; advanced placement; expectation theory; expectation theory and education; expectations, education and AP; expectations, education, and advanced placement; academic value and AP, academic value and advanced placement; critical race theory, expectancy theory; expectancy theory and Vroom; expectancy-value theory; expectancy-value theory and Atkinson; expectancy-value theory and Lewin; expectancy-value theory and Eccles; expectancy-value theory and Fishbein; and expectancy-value theory and Wigfield*. Abstracts and previews of the articles, if available, were read to determine relevance to the research topic.

Additional research was conducted after reviewing the acquired articles and their reference lists. Preference was given to articles cited consistently in research or providing a unique approach to the topic. Research containing quantitative analysis was

more heavily sought due to the consistency of methods employed for reporting AP participation; however, qualitative research was included for reviewing program perception and expectations. Careful consideration was also given to those resources that contained survey and interview questions within the publication.

Theoretical Framework

When discussing the Advanced Placement Program and the disparities that exist within it, it is necessary to acknowledge a cyclical pattern of continued inequity. The creation of the AP Program is cited as fostering the development of racial, socioeconomic, and gender disparity simply by piloting the program in high-performing schools, which fed into Ivy League universities (Franklin, 1965; Schneider, 2009). The lack of AP classes within the urban population continued the educational disadvantage experienced by low-income and non-White students. As the program grew and financial incentives encouraged program growth, less importance was placed on AP courses at Ivy League colleges and pilot high schools. While the purpose of the AP program has not changed in its 60-year history, it has been forced to acknowledge and address the widening gaps of imbalance among those who participate in its program (College Board, 2015a).

It is within this context that I explore these participation gaps. Does the Advanced Placement Program create the disparity that exists within it, or is the gap a result of disparity already present within the American school system? What motivates or influences students to participate in AP classes? Every child is raised in a community of learners, but not every child is raised with the same values and expectations. The reasons people value education change as it crosses racial, socioeconomic, and gender

lines (Fan, 2011; Neuenschwander, Vida, Garrett, & Eccles, 2007; Corra, Carter, & Carter, 2011). Is the government forcing something of value through its AP mandates? If so, who receives the greatest benefit?

This study will employ two theoretical frameworks: Expectancy Theory and Expectancy-Value Theory. While the two theories appear to exhibit parallel ideals, Expectancy Theory is driven by the external desire to receive or avoid a consequence, while Expectancy-Value Theory is defined by one's intrinsic desire to attain a goal of personal value (Vroom, 1964; Eccles, 1983; Estes & Polnick, 2012; Wigfield, 1994). The importance of including both theories as the framework of this study is to properly address the extrinsic and intrinsic consequences of individual motivation.

Expectancy Theory

Developed by Victor H. Vroom in 1964, Expectancy Theory, sometimes referred to as Expectancy-Valence Theory, was used to study why individuals make certain choices in their lives. Initially applied to the work force, Vroom suggested the theory could explain not only career choices, but also levels of job satisfaction and performance outcomes. Defining motivation as the relationship between expectancy, instrumentality, and valence, Vroom argues, "individuals choose to alter inputs based on preferences among desired outcomes and the probability of attaining those outcomes at a satisfactory level" (Estes & Polnick, 2012). Focused primarily on extrinsic motivation, Vroom suggests that a person's choice is rationally and consciously made to fulfill self-interests and avoid undesirable consequences (Lunenburg, 2011; Isaac, Zerbe, & Pitt, 2001). Continuing to build on this idea, Porter and Lawler (1968) created a model to include intrinsic motivation with the intent to differentiate between the impetus goals of

satisfaction and consequence. Several studies have examined the theory in practice, supporting the foundational structure while applying it to both business and educational institutions (Estes & Polnick, 2012; Lunenburg, 2011; Gagné & Deci, 2005; Isaac, Zerbe, & Pitt, 2001).

Expectancy-Value Theory

John Atkinson (1957), inspired by Kurt Lewin's (1938) research on the relationship between value and importance, is credited with developing the first Expectancy-Value model (Wigfield, Tonks, & Klauda, 2009). Based on the concept of intrinsic motivation, Atkinson created the model "to explain how the motive to achieve and the motive to avoid failure influence behavior in any situation where performance is evaluated against some standard of excellence" (1957, p. 371). Jacquelynne Eccles (1983), creator of modern Expectancy-Value Theory (EVT), continued to build upon Atkinson's model by expanding the range of measured factors (Wigfield, Tonks, & Klauda, 2009; Trautwein, Marsh, Nagengast, Lüdtke, Nagy, & Jonkmann, 2012). As Eccles describes, "the model itself is built on the assumption that it is not reality itself (i.e., past successes or failures) that most directly determines children's expectancies, values, and behavior, but rather the interpretation of that reality" (1983, p. 80-81). Several studies utilizing this ideology over three decades focus on how one's beliefs and values predict academic performance and achievement (Eccles, Moses, & Yulish-Muszynski, 1982; Wigfield, 1994; Wigfield & Eccles, 2000; Eccles, Tonks, & Wigfield, 2004).

Modern EVT encompasses four motivational beliefs: attainment value, intrinsic value, utility value, and cost (Eccles, 1983). While these four components, defined in

Chapter 1, are “theoretically separable,” the high correlation among constructs suggests EVT should be viewed as a “single, more general value scale” (Trautwein, Marsh, Nagengast, Lüdtke, Nagy, & Jonkmann, 2012, p. 764; Eccles, Wigfield, Harold, & Blumenfeld, 1993). However, studies developed using the EVT framework still tend to focus on each construct separately to enhance EVT’s foundational ability to “synthesize multiple theoretical perspectives” (Barron & Hulleman, 2014, p. 1; Hagemeyer & Murawski, 2014; Midgley, et. al., 2000; Eccles, 1983). This practice has led to the inclusion of additional constructs, including social consequence and the child’s perception of parent and teacher expectations, within EVT-based studies (Midgley, et. al., 2000).

Application of Expectancy Theory and Expectancy-Value Theory

As applied to my study, these theories indicate that students make decisions based on a desired outcome of either intrinsic or extrinsic value. Expectancy Theory would suggest that the independent variables of race, socioeconomic status, gender, intrinsic value, attainment value, social consequence, self-concept of ability, cost, expectations, and utility value to influence or explain the dependent variable of student choice in Advanced Placement classes because previous research confirms specific disparities exist within the AP program. It also suggests that the expected outcomes of such decisions may differ among students depending on the student’s motivation or desired result. Expectancy-Value Theory would suggest that the independent variables of intrinsic value, attainment value, social consequence, self-concept of ability, cost, expectations, and utility value would influence or explain the dependent variables of student choice in Advanced Placement classes through a performance or achievement lens. It supports the

Expectancy Theory construct of varying degrees of results based on individual motivation.

Critical Race Theory

While Expectancy Theory and Expectancy-Value Theory are the focus of my research, Critical Race Theory (CRT) will present as an underlining theme throughout much of the study. Defined as a reform movement, CRT highlights the “marginality” of African Americans and attempts to “turn it toward advantageous perspective building and concrete advocacy on behalf of those oppressed by race and other interlocking factors of gender, economic class, and sexual orientation” (Bell, 1995). With its origins based in law, the theory has become a substantial element of equity and achievement gap research in the field of education (Beachum, 2013; Santamaría, 2013; Milner, 2012; Solórzano & Ornelas, 2004; Tucker, 2008; Yosso, 2005). Most commonly applied to Black studies, the theory addresses educational discrepancies concerning Latino, Asian American, and American Indian populations, while also including feminism (Beachum, 2013). Critical Race Theory will be applied to address areas of racial inequity, to clarify differences in expectations and motivations, and to suggest and support successful leadership practices in schools in regards to Advanced Placement participation.

History of Equity Gaps in Advanced Placement

The College Board has produced several publications and presentations addressing equity gaps in the Advanced Placement Program (Edwards, 2012; Sawtell, Gillie & Smith, 2012; Edwards & Duggan, 2012; College Board, 2014a and 2014b). An annual Report to the Nation has been published each year since 2005, providing an overview of national assessment data. Individual states receive a breakdown of state data

highlighting practices already in place, as well as providing suggestions to improve the AP experience (College Board, 2015a). Schools with a minimum of 25% of graduates passing an AP exam (score of 3, 4, or 5) are listed in the report, which serves as a measure of distinction (College Board, 2014a). The most recent report, published in 2014, provides a 10-year glance at growth and achievement overall and by test topic. Racial and socioeconomic trends are also addressed in the state supplement.

Low-income students, defined by the financial qualifications for free and reduced lunch, comprise 48% of the K-12 student population in the United States (College Board, 2014b). Of those students, only a quarter (12%) participated in the AP Program with less than half passing their accompanying exam. The highest percentage of participation of low-income students occurs in Texas. With half of its K-12 student population qualifying for free and reduced lunch, 50,584 AP participants (49.9%) are identified as low-income, with 22,884 of those students (43.9%) passing their exam with a score of 3 or higher (College Board, 2014c). The lowest percentage of participation at 5.2% is in North Dakota, where the low-income level stands at 31.7% (College Board, 2014b). To date, no state has been able to eliminate the achievement gap within this subgroup. With statistics painting a very clear picture of disproportion, one might wonder if eliminating the gap is achievable.

Low-income status results in a 40% reduction in Advanced Placement participation, when all races and genders are considered (Klopfenstein, 2004). High schools in lower income areas are less likely to offer classes beyond the required courses due to low funds and expected low participation rates (Adelman, 2006). In minority schools that do offer AP classes, low-income students typically are placed on a lower

educational track resulting in lower expectations and less opportunity (Klugman, 2013; York, 2012; Ndura, Robinson, & Ochs, 2003; Solórzano & Ornelas, 2002). As these students progress through their high school courses, they become less prepared to be successful in an Advanced Placement class, which further expands the inequity (Klugman, 2013; Klopfenstein & Thomas, 2010).

Nationally, demographics of the graduating class and AP exam takers in 2013 show the majority of students participating in the AP program are White. African American students were the most underrepresented group in AP classrooms in 2013. Other underrepresented groups included Hispanics, the Asian/Asian American/Pacific Islander community, and the American Indian/Alaska Native ethnic group (College Board, 2014b). See Table 1 for a national comparison of equity gaps among racial groups.

Table 1

National Comparison: Graduating Class of 2013 and AP Participation Rates of 2013

Racial Group	Graduating Class - % of Population	AP Participation - %	
		of Graduate Population	Equity Gap Percentage
Native American & Alaska Native	1.0	0.6	-0.4
Asian, Asian American, & Pacific Islander	5.9	10.7	4.8
Black or African American	14.5	9.2	-5.3
Hispanic or Latino	18.8	18.8	0
White	58.3	55.9	-2.4

Hispanic students who have recently immigrated to the United States are 30% less likely to enroll in AP classes due to language barriers (Klopfenstein, 2004). While the

American Indian and Alaska Native population has the lowest number of participants- only 1% of the graduating population in 2013 -over half of those students participated in the AP program and demonstrated a much higher level of success. Some states have eliminated the equity gap for particular racial groups according to College Board data, primarily in the American Indian/Alaska Native and Hispanic/Latino population, but there is no information, or speculation, on how that was achieved (College Board, 2014b).

While gender is not addressed in the annual report produced by the College Board, an Indiana Department of Education publication reports more males than females are participating in the AP program in Indiana, but females are outscoring males despite taking less exams (Fatum, 2013). North Carolina also reported a strong female presence within the AP program, with White females substantially outnumbering and outscoring African American students and White males in English and Foreign Language, while maintaining the highest percentage of participation overall (Corra, Carter, & Carter, 2001). A longitudinal study conducted by Mau and Bikos attribute the strong female presence to “significantly higher occupational aspirations,” especially Asian American females (2000, p. 192). With African American males more likely to choose AP courses based on the teacher rather than the content, it is not necessarily surprising that this group is consistently underrepresented (Hubbard, 2006; Klopfenstein, 2004).

In the past 10 years, participation in the AP Program has doubled in size, with exam pass rates remaining fairly steady (College Board, 2014b). Roughly, 20% of American students graduating in 2013 passed an AP exam. Indiana was below the national average at 16.2%, but has experienced a growing trend in several areas (2014b).

Low-income participation in this state has improved 15% since 2003, while the number of qualifying students has increased 10% (College Board, 2014a). Indiana has experienced an increase of involvement in underrepresented minority groups, narrowing the gap for African American and Hispanic students (Fatum, 2013). Participation and success among White students in Indiana, however, is on a steady decline (College Board, 2014a, 2015b). This trend mirrors the national decline for White students, most likely due to the changing racial composition of the American population (Aud, Fox, & Kewal Ramani, 2010).

Influences on Student Choice

A student's choice to participate in an Advanced Placement course is most commonly influenced by parent expectations, but several factors may also contribute (Ndura, Robinson, & Ochs, 2003). The ideas of academic value and intrinsic motivation help explain a student's internal desire to be successful in a challenging class and receive an academic benefit as the result (Hertberg-Davis & Callahan, 2008; Pizzolato, Brown, & Kanny, 2011). This internalized aspiration can be heavily influenced by teacher expectations, which are typically manipulated through government policy and incentives. The following section discusses each area in more detail.

Academic Value

Various researchers have analyzed the concept of academic value pertaining to AP classes in an effort to understand enrollment trends within the program (Klopfenstein, 2004; Wildhagen, 2013). A study of AP participation in Texas high schools brings focus to the lack of student involvement despite increasing availability and overall growth (Klopfenstein, 2004). Citing urbanicity as the reason, Klopfenstein argued that AP

course enrollment is lower in regions that place a lower value on a college education, a trend commonly seen in African American and Hispanic communities. Likewise, Wildhagen's (2013) research suggested that the value of the AP credential would continue to decrease among disadvantaged groups, "while privileged groups will be able to protect the value of democratized credentials for members of their own groups" (p. 25). Her argument indicated AP courses are less valuable to underrepresented groups because the courses represent more than academic competency. In what she called "non-standardized credentials," Wildhagen (2013) argued that as accessibility to the AP program increased for disadvantaged groups, the benefits of the AP credential decreased and predicted the gap would continue to widen (p.19). Mamadi Corra and her colleagues (2011) add support to this claim based on the perceived "social consequences of academic distinction" among the African American community (p. 42). Afraid of standing out as a minority in the classroom or being accused of "acting White," many minority students opt to enroll in lower level classes. Despite this research, however, it is important to note that as elite high schools continue to abandon the AP program, they will likely contribute to the lower value of the credential through establishing new ways to distinguish themselves (Schneider, 2009).

Intrinsic Motivation

Students electing to participate in AP classes have higher intrinsic motivation than those who do not (Bryan, Glynn, & Kittleson, 2011). This type of motivation originates from one's self-perception of control over academic success, which is achieved through personal goal setting and explicit planning to reach those goals (Pizzolato, Brown, & Kanny, 2011). For most, this translates into a need for challenging curriculum with high

performing peers and gaining college credit at an earlier stage in their educational careers, but also contains an element of self-interest (Ndura, Robinson, & Ochs, 2003; Hertberg-Davis & Callahan, 2008). These students consistently express high satisfaction with their high school experience than those who do not participate in AP courses (Bleske-Rechek, Lubinski, & Benbow, 2004; Flowers, 2008). It is probable that students with high intrinsic motivation have parents with a high perception of their child's academic abilities and high expectations for achievement (Gonida & Cortina, 2014).

Several studies address the social consequences of AP participation for minority groups (Tucker, 2008; Ogbu, 2003; Corra, Carter, & Carter, 2011; Fan, 2011). Findings from the Shaker Heights study asserted that, in general, African American students choose non-AP courses because they want an easier workload (Ogbu, 2003). Several African American male students also expressed a fear of being accused of "acting White" and did not feel comfortable being part of the minority group in an AP class. African American females tend to react differently to discriminatory situations than African American males. They are more likely to seek justice through a democratic approach, resulting in a feeling of value. On the other hand, African American males tend to accept discrimination as inevitability of their race and gender (Hubbard, 2005). As a result, African American females are more likely to plan for their future and pursue AP coursework than their male peers (Ogbu, 2003; Adelabu, 2007). The same correlation can be found among Hispanic males and females, despite a higher level of AP enrollment (Adelabu, 2007; Moore & Slate, 2008).

Policy and Incentives

In an effort to encourage increased AP Program participation, educational policy has implemented mandated curricula and financial incentives (Conger, Long & Iatarola, 2009; Holstead, et al, 2010; Klopfenstein & Thomas, 2010). As part of an emerging trend in 2009, Indiana, Arkansas, South Carolina, and West Virginia required all high schools to offer AP classes (IC 20-30-10-4). In addition, Idaho, Kentucky, Mississippi, Ohio, Oregon, Vermont, and Virginia were expected by their respective state governments to offer some kind of advanced courses at the district or high school levels (Klopfenstein & Thomas, 2010). Indiana also allows school corporations to “provide a supplemental payment to a teacher in excess of the salary specified...if the teacher teaches an advanced placement class” (IC 20-28-9-1.5). Indiana schools are specifically encouraged to provide AP courses in math and science, by appropriating money to implement the program for students who are enrolled in public high school and qualify as an Indiana resident (IC 20-36-3-8). This money can be used to cover the costs of teachers, materials, exam fees, and any other fees associated with implementing the program.

Along with state-mandates, AP participation is promoted through grade weights, a practice that is not impacted by exam scores. Through this process, students in AP classes have the potential to increase their GPA and maintain high class rank status, an incentive that aids in college admissions. All states, except Oregon, provide some level of financial assistance at the district level for low-income students participating in the AP program (Lipp, 2011; Holstead, Spradlin, McGillivray, & Burroughs, 2010). Indiana

waives exam fees for science and math tests when the state budget can accommodate the cost, and Texas offers cash bonuses to teachers based on student exam scores.

Government money is not the only incentive available to high schools. The federal government offers financial assistance if schools “disclose the number of students who take an AP exam and the demographic information about the students” (Holstead, Spradlin, McGillivray, & Burroughs, 2010; IC 20-20-8-8). A third incentive appeals directly to student involvement by awarding college scholarships. In Massachusetts, a student can have his tuition waived at a state university for eight semesters if he passes two AP exams and maintains a 3.3 GPA. In some cases, AP course participation is a prerequisite for awarding post-secondary scholarships. As of 2010, 12 states offered financial incentives, 4 states offered scholarship incentives, and seventeen states offered accountability incentives for AP Program participation.

Parental Expectations

Students from higher socioeconomic status tend to have parents with high expectations. College is often not considered optional, and students are more likely to enroll in AP classes for both the challenge and potential college credit (Adelman, 2006). While students from low-income families may also experience the college expectation from parents, there is less likelihood of AP enrollment due to a cost barrier (JBHE Foundation, 2005). Race is also a factor, however. Non-White students are often taught unconsciously by their parents that their efforts in school will not be rewarded the same as White students, despite a shared consensus regarding the need for a good educational experience (Tucker, 2008).

College entrance. Parents, who expect their children to be college bound, often look for schools that are most likely to prepare students through challenging coursework (Attewell, 2001). An appealing characteristic of Advanced Placement courses is the ability to earn college credit prior to attending a university through participating in the accompanying examination at the end of the selected course. Viewed as a strong predictor of college success, most post-secondary institutions will award credit based on the passing score of three or higher. More elite universities, however, tend to prefer either a score of four or five before awarding credit (Schneider, 2009). Students enrolled in AP classes are consistently recognized by colleges as motivated and intelligent - skills that compliment success in the post-secondary environment (Lipp, 2011; Klopfenstein & Thomas, 2009; Bryan, Glynn, & Kittleson, 2011; Attewell, 2001). As a result, many students cite college entrance as one of their main motivators in AP participation (Hertberg-Davis & Callahan, 2008; Ndura, Robinson, & Ochs, 2003).

The diversity of students pursuing college entrance has increased in recent years, specifically within the Hispanic community, which has experienced a four percent rise since 2000 (Aud, Fox, & Kewal Ramani, 2010). In addition, high school students pursuing college degrees immediately following graduation has increased across race and socioeconomic boundaries, despite the widening gap in preparation (Roderick, Nagaoka, & Coca, 2009). For example, in 2008, 56% of graduating African American high school graduates pursued college, a 12% increase from 1980 (Aud, Fox, & Kewal Ramani, 2010). However, they accounted for only 14% of the incoming college freshman class nationwide. Of those 2,269,284 African American students, 1.45 million were female (Aud, Fox, Kewal Ramani, 2010).

Labor market. The link between academic achievement and the labor market is not a new concept for research. Within the last decade, several researchers have examined the effects of specific types of education and income, focusing on underrepresented communities and their educational opportunities, as well as, inequities in gender pay grades (Klopfenstein, 2004; Flowers, 2008; Fowler, 2013; Edwards, 2012; Milner, 2012; Moller & Stearns, 2012). While gender pay discrepancies cannot be explained satisfactorily through regression analyses, high school curricula have been identified as a predictor of income for young adults (Flowers, 2008; Moller & Stearns, 2012; Becker, 1993). For example, students participating in additional math classes in high school tend to earn 6% more than their minimalist peers (Rose & Betts, 2001).

Considering these students as human capital, the value of educational experiences within the AP system can be linked more explicitly to labor market outcomes. Utilizing the human capital theory, which “suggests that an individual’s educational and labor market outcomes are positively influenced by attaining additional academic and social skills,” Lamont Flowers hypothesized more advanced labor market outcomes exist for students who have participated in AP classes (2008, p. 123). Data from the National Education Longitudinal Study of 1988-2000 (NELS) positively links AP class participation to college-entrance exam scores across all races, as well as to financial earnings for Asian, Asian Americans, Pacific Islanders, and Whites.

Similarly, in their study, Moller and Stearns argued that tracking is to blame for opportunity losses for African American students, with White and Asian American students placed in higher-level, faster-paced tracks that include AP class offerings (2012). Tracking, or ability grouping, determines students’ academic paths as a result of their

past scholastic performances (National Education Association, 2015). Critics claim this practice only widens the achievement gap, while proponents view it as an opportunity for more individualized instruction to address student needs.

Utilizing the NELS to examine student achievement and income variables, Moller and Stearns concluded that males, in general, significantly out-earned females, but racial disparity becomes evident within the gender groups themselves (2012). White students placed on a rigorous college preparatory track drastically outnumbered other racial groups of both genders and reported higher income levels in young adulthood. Still, regardless of gender, race, or socioeconomic differences, students who earn a college degree will out earn high school graduates by at least \$20,000 on average (Kelly, 2012). It is not surprising, then, that parents want their children to have the greatest opportunities available to them when they enter the workforce.

Teacher Expectations

The number of high school students pursuing college degrees has increased across race and socioeconomic status (Roderick, Nagaoka, & Coca, 2009). College-bound students, who are typically placed on an upper-level track in high school, enjoy the benefits of learning from higher-skilled, more stimulating teachers and are surrounded by like-ability, like-minded peers (Moller & Stearns, 2012; Hertberg-Davis & Callahan, 2008). They are encouraged to pursue AP coursework by teachers and school counselors, which send a message of approval to the student. Also noted earlier, most of those students are White (College Board, 2014b).

While research has shown that teacher expectations differ among students, such bias is not always connected to a student's race. A study conducted by Christine Rubie-

Davis (2010) posited that student achievement levels influence teacher expectations. For example, if a student, regardless of race, gender, or socioeconomic status, is perceived as a low achiever, the teacher will have low expectations. Students, then, affirm the teacher's bias by detaching themselves from the expectations through psychological insulation (Adelabu, 2007). In other words, they focus on an area in school in which they can be successful or are already experiencing success. How reasonable a student judges his teachers' expectations to be also influences his chosen coursework (Belfi, et al, 2012).

It has been argued that White teachers can exhibit a racist mindset by assuming minority students cannot handle the challenge of AP coursework (JBHE Foundation, 2005). Either consciously or unconsciously, teachers' personal beliefs regarding race can contribute to the imbalance of minority groups in AP classes (Milner, 2012). The cultural expectations in a minority home are oftentimes at conflict with the Eurocentric cultural expectation of school (Ogbu, 2003; Milner, 2012). The lack of cultural understanding by both school personnel and students usually results in low teacher expectations (Corra, Scott, & Carter, 2011; Santamaría, 2014; Adelabu, 2007; Ogbu 2003; Milner, 2012).

Discussion

Racial, socioeconomic, and gender disparities are consistently defined in research pertaining to Advanced Placement Program inequities. Five racial groups are reliably used in data: White, African American, Asian/Asian American/Pacific Islander, Hispanic, and Native American/Alaska Native. Socioeconomic distinctions are determined using the federal guidelines for free and reduced lunch, and gender is reported as male or female as reported through the official school record. While racial and socioeconomic

disparities are at the forefront of research concerning program inequities, gender does appear frequently in reports examining a specific race.

Academic value, intrinsic motivation, and government policy and incentives influence the participation rates of all students in various ways depending on a student's racial or socioeconomic background and gender. Research suggests that the academic value of AP credentials negatively affects student enrollment in urban settings (Wildhagen, 2014; Klopfenstein, 2004). While AP classes tend to be more readily available in urban communities due to federal and state incentives, African American and Hispanic students in these areas tend to place a lower value on a postsecondary education. Affluent, minority students are not more likely to enroll in AP classes due to their socioeconomic status, due to fears of social consequences and teacher expectations (Corra, Carter, & Carter, 2011; Tucker, 2008; Ogbu, 2003).

Parents hold the highest influence in a student's decision to participate in the Advanced Placement program, followed by teachers (Ndura, Robinson, & Ochs, 2003). Parental perception influences a student's intrinsic motivation, and both parents and teachers contribute to a student's view of self-worth. Teachers tend to offer more encouragement to students they perceive as high achievers.

Several areas regarding demographic disparities in Advance Placement classes lack the research needed to clearly identify the cause of continued inequity despite efforts to eliminate it. It is unclear why only White students can retain academic value for AP credentials when their participation rates are decreasing (Wildhagen, 2014; College Board, 2014a). Likewise, identifying why academic benefit is not enough of a motivator to participate in AP classes may help focus school interventions aimed at increasing

minority program enrollment. The effects of federal and state policy for AP coursework studied in an isolated manner would be beneficial in determining whether the government is supporting a program of value or contributing to the growing inequities within it.

Only a handful of researchers have focused on in-depth state-specific studies, and the College Board provides only a snapshot of AP demographic data for each state every year. It is imperative that states understand the levels of inequity that exist within their schools and the potential reasons they exist. Race, socioeconomic status, and gender cannot continue to be isolated from other factors, such as motivational factors. This topic should be a continuous focus of study on both national and state levels.

CHAPTER THREE: METHODOLOGY

As developed in Chapters One and Two, demographic disparities have plagued the Advanced Placement program since its inception. While race and socioeconomic status tend to be at the forefront of educational inequity research, several factors may also play role in influencing students' choice regarding AP participation: gender, academic value, college readiness, labor market, parent expectations, school expectations, and intrinsic motivation. Using an explanatory sequential mixed-methods approach, I examined the current state of demographic disparities in Indiana and attempted to explain the factors that influence Advanced Placement participation among graduating seniors in a specific Indiana high school. This chapter describes the research design, sample, instrumentation, data collection, data analysis, and limitation of the study.

Purpose of Study

The two main purposes of this study are to determine the effects of demographic variables and the reasons for AP participation. Specifically, this study examines the differences in Advanced Placement class participation in a large Indiana high school by race, socioeconomic status, and gender. Additionally, the study describes the reasons certain demographic groups in high schools may choose to not participate in the Advanced Placement program even though their ability levels would suggest a successful outcome. Several ideas will be discussed in an attempt to further explore these ideas. The concept of academic value will be reviewed within the context of Expectancy Value Theory (attainment value, intrinsic value, cost, and utility value) and three additional motivation paradigms (social consequence, expectations, self-concept of ability). The effects of government policies and incentives on school expectations within the context

of school decisions regarding AP program promotion and offerings will also be reviewed. In addition, the area of socioeconomic status will be utilized to explore why an achievement gap exists among socioeconomic peers and to identify possible explanations of this occurrence. The first step of the study will identify several Indiana high schools that are successfully, or unsuccessfully minimizing, the racial, socioeconomic, and gender gap in AP participation. Leadership practices of personnel in schools will be identified and analyzed to better understand the promotion strategies for Advanced Placement participation and success.

Research Questions

It is difficult to conduct research in the field of education without discussing the pattern of demographic disparities in school participation and achievement. Race, socioeconomic status, and gender are the three main groups that are consistently identified as variables contributing to the achievement gap (Klopfenstein, 2004; Ogbu, 2003; Corra, Carter, & Carter, 2011; Adelabu, 2007; Fowler, 2013; Aud, Fox, & Kewal Ramani, 2010; Ndura, Robinson, & Ochs, 2011). As such, three main research questions will be considered throughout this study.

1. How does student participation compare within and among each demographic group (i.e., SES, gender, and/or race)?
2. To what extent do students' demographic backgrounds and/or motivational patterns predict AP participation?
3. What are the different strategies stakeholders have taken to influence and promote AP participation among all racial, socioeconomic, and gender groups?

Aligning these questions to current literature addresses several key components concerning the Advanced Placement Program. Perspectives presented in this review will include parental and school personnel influence on student choice, as well as the role of Expectancy Value components and three additional motivational constructs. The lack of academic value in urban schools despite rising AP enrollment numbers and determinants of course offerings, including government influence and policy, will also be discussed within the context of each of these areas. Each perspective demonstrates a unique but substantial component of the cycle of inequity within the AP Program, which needs significant attention to resolve.

This study highlighted the racial, socioeconomic, and gender gaps present in Advanced Placement class participation in a large Indiana high school. It also attempted to describe why certain demographic groups opt to participate in AP classes and others do not. I researched the perceived academic benefit of AP classes in reference to students' beliefs and perceptions, as well as other potential factors of influence. Additionally, the study explored potential explanations for gaps among socioeconomic peers, and further investigated educational attitudes and practices of one Indiana high school that is not successfully minimizing the racial, socioeconomic, and gender gaps. This chapter describes the research design, sample, instrumentation, data collection, data analysis, and limitations of the study.

Research Design

Due to the multi-faceted nature and intent of this study, an Explanatory Sequential Mixed Methods (QUAN→qual) approach is the appropriate design (Creswell, 2014; Teddlie & Tashakkori, 2009). The quantitative data established the foundation for the

research and identified areas for further exploration. Incorporating qualitative data into my study provided a deeper explanation for the patterns currently present in AP class participation. According to Teddlie and Tashakkori (2009), the “transformative perspective” of a mixed methods position “enables the researcher to simultaneously ask confirmatory and exploratory questions and therefore verify and generate theory in the same study” (p. 33).

I conducted this mixed methods study in two phases. In phase one, quantitative data published by the College Board and Indiana Department of Education were analyzed to identify equity gap patterns in Advanced Placement classes in Indiana high schools and identify those schools that have and have not successfully minimized that gap. I employed the College Board definition of equity for this purpose. In phase two, I conducted surveys and interviews with high school seniors and school personnel to illustrate the relationship between individual differences in the motivational factors, the presence (or lack of) and implementation of school strategies, and AP participation within the school identified in phase one.

Sample

During phase one, the sample included all Indiana high school seniors. Students participating in AP courses are automatically reported to the College Board. To determine equity gaps within the program, this data was compared to state school demographic collections. High school seniors have been specifically selected for this sample because the College Board reports annual results in this manner (2014b). The number of high school graduates in 2013 who had participated in the AP program was 22,256, compared to the total number of graduates at 63,524 (College Board, 2014a). I

estimated 64,500 students would be included in this portion of the study based on reported growth trends in AP participation by the College Board for the state of Indiana (2014a). However, Indiana's Department of Education reported 69,406 graduates for 2013, so the sample was larger than the estimate (2015).

Phase two included high school seniors, parents, and school personnel from a specifically selected Indiana high school. The group of seniors included both those who participated in AP classes and those who did not, for gaining a more thorough understanding of student choice in this area. High school seniors were required to be at least 18 years of age. Contacted parent participants were also from both groups. I estimated 300 seniors and their parents or guardians were contacted to participate in surveys and interviews. The actual number of contacts equaled 176 students and their parent or guardian, for a total of 352. Approximately, 135 school personnel were contacted for surveys and interviews. School personnel included administrators, counselors, and AP teachers.

Instrumentation

The initial phase of this study involved an analysis of archival data from the Indiana Department of Education. A data request sent to the College Board was denied because "data of this nature can only be released to the institution, district, or state the data pertains to" (College Board, personal communication, December 9, 2015). The second phase of this study required new data to be collected to address the research questions pertaining to influences and expectations at varying levels. No existing instrument satisfied my criteria in this area, so I chose to adapt time-tested surveys developed by Jacqueline Eccles and her team of researchers (CAB, 1990, 1991, 1998).

The third phase utilized SPSS to analyze archived data in relationship to the quantitative data collected in the second phase.

Development of the Instrument

For the purpose of this study, I created self-guided surveys in Qualtrics for students, parents, and school personnel. The student and parent surveys are an adaptation of three studies using the EVT framework. The Childhood and Beyond (CAB) questionnaires launched by Jacqueline Eccles and her team of researchers in 1986 were developed for “a large-scale, cross-sequential, longitudinal study of development in four primarily white, lower-middle-to middle-class school districts in Midwestern urban/suburban communities” (n.d.). These questions focused on the areas of self-concept of ability, math value, and math interest. The only alteration applied to the survey questions taken from Waves 5 (1990) and 8 (1998), changed the word *math* to *AP class(es)*. Written permission to use and alter these surveys was received from Eccles (personal communication, January 20, 2016).

Additionally, the student and parent surveys included items from surveys either developed within the EVT framework or adapted from Eccles original CAB surveys. Questions pertaining to expectations were adapted from the Michigan Study of Adolescent and Adult Life Transitions (MSALT), (Eccles, et al., 1983). Questions were rewritten to pose as a statement. Written permission to use and alter this survey was received from Eccles (personal communication, January 20, 2016). Questions concerning intrinsic value and attainment value from the Valuing of Education (VOE) Scale developed by Ann Battle and Allen Wigfield (2003). Alterations applied to these statements changed the words *postgraduate education* to *Advanced Placement class(es)*

(Hagemeier & Murawski, 2014). Survey items pertaining to social consequence were adapted from the Patterns of Adaptive Learning Scales (PALS) developed by Carol Midgley and her team (2000). Adaptations to questions included adding *AP* in front of the word *class*. All surveys have been publically published, so written permission for its use was not sought.

The surveys provided additional data on the relationship between race, gender, and socioeconomic status and motivational beliefs, specific to the preselected high school. I employed a Likert scale to the survey questions for the purposes of quantifying the data as a continuous variable. Participants were asked to select answers on a 7-point scale in which 1 = strongly agree, 2 = agree, 3 = somewhat agree, 4 = neither agree nor disagree, 5 = somewhat disagree, 6 = disagree, and 7 = strong disagree.

The teacher survey consisted of anecdotal questions with open-ended responses, specifically to address the issue of potential bias in the classroom. Teachers were asked how likely they would be to recommend a specific student for AP classes and to explain their reasoning. Questions “included names of racial and ethnic origin” to indicate “stereotypical recognition” and were gender specific (Conaway & Bethune, 2015). Questions addressing socioeconomic status referred to students receiving free or reduced lunch or paying for school lunch under federal guidelines. Additionally, teachers were asked questions pertaining to their level of experience with Advanced Placement classes.

A semi-structured interview protocol was also developed to serve as a follow-up to the Qualtrics survey. The development of these questions was guided by research and survey responses that required further explanation at the leadership level. Only those in administrative positions were interviewed. Protocols can be found in Appendix D.

Reliability. According to Litwin (1995), “reliability is a statistical measure of how reproducible the survey instrument’s data are” (p. 6). By utilizing preexisting surveys, reliability scores were available from the original authors (CAB, 1990, 1998; Battle & Wigfield, 2003; Hagemeyer & Marawski, 2014; Midgley, et. al., 2000; MSALT, 2000). Each survey contained a specific construct of questions, measured with Cronbach’s alpha to ensure reliability (Table 2). All constructs utilized were equal to or exceeded the minimum required reliability score of .70 (Litwin, 1995). The anecdotal questions written for the teacher survey were not tested for reliability.

Table 2

Instrument Table

<u>Instrument</u>	<u>Subscales</u>	<u>Sample Item</u>	<u># of Items</u>	<u>Cronbach’s Alpha for Previous Studies</u>	<u>Cronbach’s Alpha for this study</u>
CAB (Scale 1-7)	Self-Concept of Ability	How well do you expect to do in your AP classes this year?	5	0.92	0.86
	Value (Utility)	In general, how useful is what you learn in AP classes?	4	0.84	0.79
	Cost	How hard would you have to try to do well in an AP class?	3	0.78	0.87
VOE (Scale 1-7)	Intrinsic Value	I like the challenge of doing the work required to complete an AP class.	7	0.88	0.85
	Attainment Value	Completing an AP class is important in allowing me to show that I am competent.	7	0.84	0.83
PALS (Scale 1-7)	Social Consequence	If I did well on an AP assignment, I would not want other students to see my grade.	6	0.78	0.78
MSALT (Scale 1-7)	Expectations	I am doing as well as in my AP classes as my parents want me to do.	2	0.89	0.93

Validity. I employed a panel of experts to examine the survey and interview questions for validity to provide feedback and make recommendations for improvement. Specifically, the panel addressed if each instrument sufficiently answered the stated research questions and if equal weight was given to all variables tested (Creswell, 2014). This panel included Dr. John Ellis, Assistant Professor at Ball State University and Doctoral Adviser; Dr. Marilyn Quick, Assistant Professor and Specialist and Doctoral Academic Advisor at Ball State University; and Kianre Eouanzoui, Statistician for Research and Academic Effectiveness at Ball State University.

Data Collection

Both quantitative and qualitative data were collected in this study. The first phase focused solely on quantitative data, while the second phase included both quantitative and qualitative measures.

Phase one

Archival statistical data was collected directly from the Indiana Department of Education upon IRB approval. A data request was sent to College Board, but not fulfilled. Limited public information was available from both organizations, and there was conflicting information between the two organizations, as well as between Indiana state reports and Indiana DOE Compass data site (Indiana Department of Education, 2013).

Data provided by the IDOE incorporated all author requested 2014-2015 school year data for each Indiana high school into one file. Specifically, this data included (a) the number of males and females enrolled in AP classes per high school; (b) the number of students by race (White, African American/Black, Hispanic, Asian/Asian

American/Pacific Islander, Native American/Alaska Native, multiracial, and other) enrolled in AP classes per high school; and (c) the number of free and reduced lunch students enrolled in AP classes per high school. The data sheet provided combined all requested data in one spreadsheet instead of three separate documents.

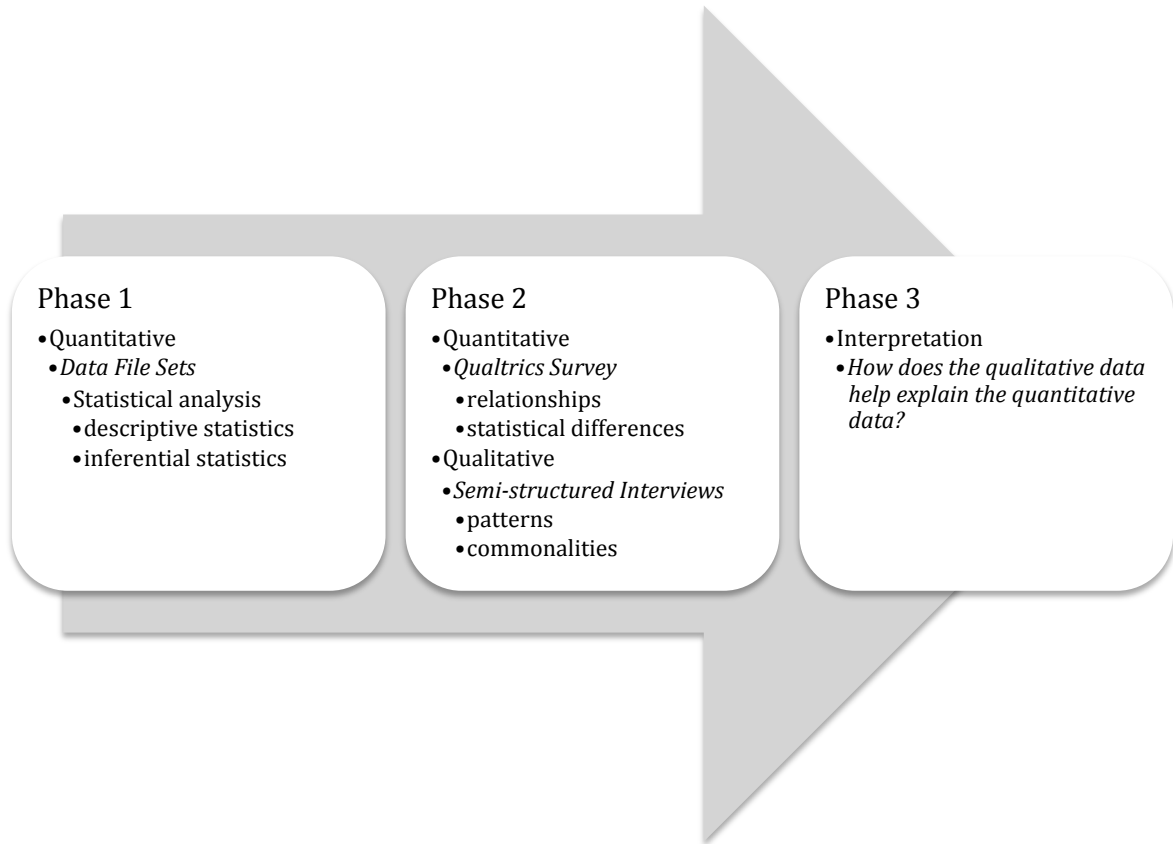
Phase two

Data was collected via an online Qualtrics survey and through face-to-face interviews. Following the initial launch of the Qualtrics survey, one additional reminder was sent in an effort to maximize participation. Participants were asked to self-identify their gender, race, and socioeconomic status. Interviews were conducted face-to-face, recorded, and transcribed.

Data Analysis

Data analysis occurred in three phases (Figure 1). The first phase concentrated on the analysis of quantitative data, while the second phase focused on the analysis of both quantitative and qualitative data. A third phase explored how the qualitative data help explain the quantitative data.

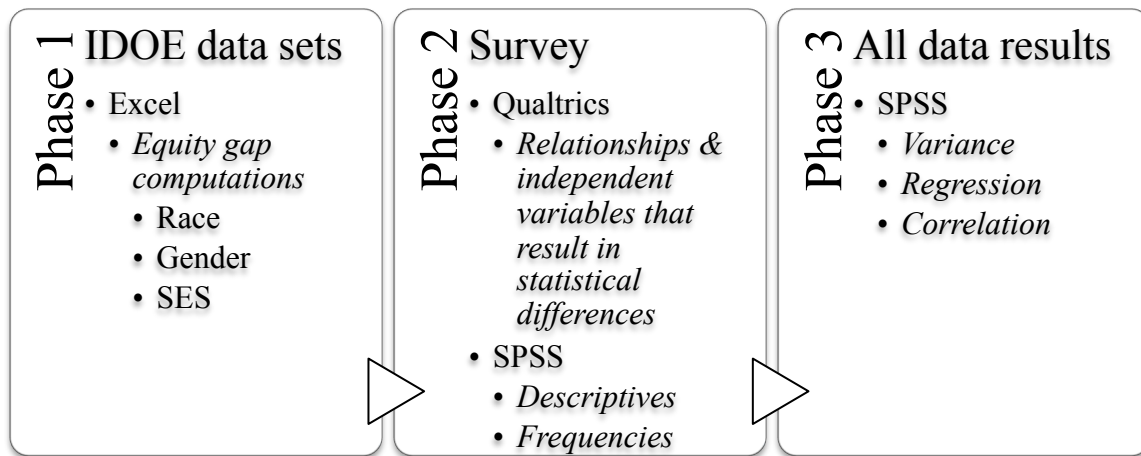
Figure 1. Data Analysis Process



Quantitative Data

Quantitative data was collected and analyzed in all three phases of the analysis process (Figure 2). Both descriptive and inferential statistics were reported. Several regression analyses were conducted to examine relationships between demographic groups and AP participation, as well as motivational constructs and AP participation. Results reported variance levels as it pertained to AP participation. Correlation analyses were conducted to check for multicollinearity, or similarities among variables.

Figure 2. Quantitative Data Analysis



Phase one. Archived statistical data collected from the Indiana Department of Education was analyzed using basic comparative computations in the separate areas of race, gender, and socioeconomic status for all Indiana high schools in which data was available. Schools' participation rates in each category were compared to the total population numbers in each category to determine the gap percentage. Employing this methodology for analysis allowed me to compare the range of inequity in each Indiana high school compared to all other Indiana high schools. Only public Indiana high schools were included in this analysis. Indiana independent schools, private schools, and parochial schools were not included.

I used the data results to rank Indiana high schools by their equity gap percentages in the areas of race, socioeconomic status, and gender. Variables were analyzed separately, and gap percentages were calculated by comparing the number of AP participants within a school with the total demographic population from the same school. One public Indiana high school with the lowest gap percentages overall, and one public Indiana high school with the highest gap percentages overall, were selected for further

research. Despite my efforts, as described in Chapter Four, only one high school agreed to participate in the study.

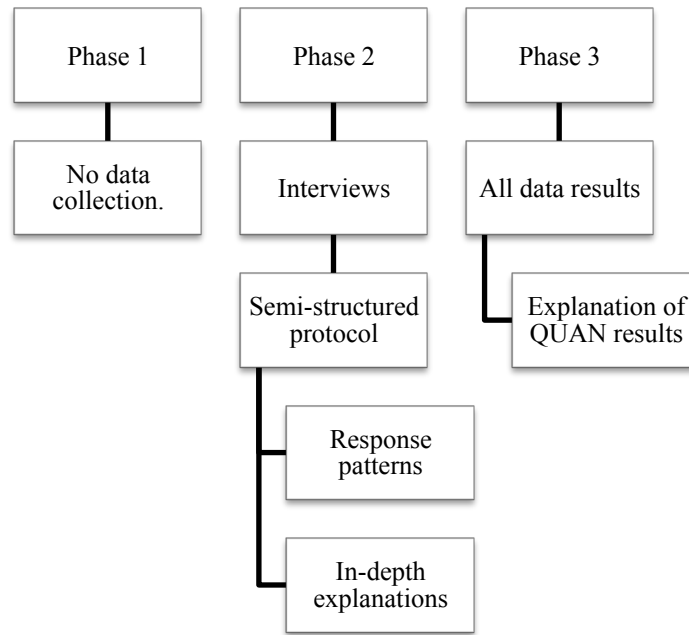
Phase two. Surveys, developed through the Qualtrics program provided by Ball State University, were utilized to gather specific quantitative data. Surveys were only distributed to participants over the age of 18. Students signed for consent, but their parents were informed of the study. Teachers and parents of the participating students also signed for consent prior to participation in the study. Surveys were not distributed to those who did not provide consent for the study. Information gathered via the online survey was analyzed for relationships and individual variations that resulted in statistical differences. For the purpose of obtaining continuous variables, survey participants were asked to rank the importance of pre-selected factors influencing student participation in AP courses based on recently conducted research. These responses were uploaded into SPSS and analyzed through descriptive and inferential statistics.

Phase three. Independent t-tests, ANOVA, correlation tests, and regression tests were employed to further examine the relationship between student race, gender, and socioeconomic status to AP participation. The same analysis process was employed to investigate the relationship between the motivational constructs (attainment value, intrinsic value, social consequence, expectations, self-concept of ability, cost, and utility value) and AP participation. All analysis was conducted with SPSS software.

Qualitative Data

Qualitative data was collected and analyzed in the second and third phase of the study. The purpose in gathering qualitative data was to offer deeper insight into the quantitative results. Figure 3 outlines the qualitative data analysis process.

Figure 3. Qualitative Data Analysis



Phase one. The first phase of this study does not include the collection or analysis of qualitative data.

Phase Two. Interviews were conducted at the selected Indiana public high school to further explore the information obtained from the surveys. A semi-structure protocol for the interviews provided structure to ensure key ideas were addressed, while allowing for additional questions influenced by interviewee responses. Interviews were recorded and transcribed. Interviewees included school personnel in administrative positions that could speak specifically to the leadership aspects of implementing and promoting AP classes in the selected high school. All participants were over the age of 18 and signed consent forms prior to the interviews.

Phase three. In this phase, answers to the interview questions were analyzed to provide possible explanations of the quantitative results and conceivably present new ideas for further study in this area.

Limitations of the Study

School Participation

A major limitation to this study was finding schools willing to participate in my study. Six separate high schools were contacted an average of four times via email and phone between September 2016 and January 2017, including contacts on my behalf by my dissertation advisor. Still, only one agreed to participate. This lowered the number of teachers, parents, and students available to participate in the study and removed the opportunity for a multi-school comparative analysis.

Language Barrier

The selected school houses the highest number of Spanish-speaking students in the state of Indiana, with several participants speaking English as a second language. This may have contributed to language confusion while answering survey questions. For example, the term *advanced placement* and its abbreviation (*AP*) are used frequently throughout the survey to refer to classes specifically offered through the College Board program. It was assumed that students would interpret this term as it was intended, but particular answers suggest that some participants confused it with generic honors classes or International Baccalaureate classes.

Additionally, the principal shared that many of the parents who received the parent survey spoke limited English. At his recommendation, the survey and survey reminders were sent in English only. No parent surveys were completed.

Survey Length

Student Survey. The student survey consisted of 43 questions, with a predicted completion time of 20 minutes. Only nine of the 44 questions were required. Six of these questions were placed at the beginning of the survey, while the three demographic questions were listed as the final questions. Only 44 of the 155 student respondents answered the required demographic questions. This was most likely due to the placement of the questions within the survey, as well as, to the length of the survey.

Parent Survey. The parent survey consisted of 45 questions, with a predicted completion time of 22 minutes. The length of the survey might have dissuaded participation. During his interview, the principal explained that school parents with limited English knowledge do not often respond to requests. My offer to translate the survey into Spanish was rejected based on the principal's insistence that it would not improve my chances of survey completion among parents. No parent surveys were completed.

Teacher Survey. The teacher survey consisted of 14 questions, with a predicted completion time of 12 minutes. Three questions focused specifically on anecdotal situations applying directly to student gender, race, and socioeconomic status. Additionally, three questions asked for an explanation of the answers provided to the previous three questions. The range in the number of teacher responses might have resulted from a recognized intent to show teacher bias, or a lack of interest in the question. Few teachers expounded on their answers to either recommend or not recommend a student for an AP class.

Another limitation of the teacher survey involved teacher responses, which were given in the context of their current teaching positions at the school. This specific school promotes the International Baccalaureate program, another rigorous high school pathway, instead of the Advanced Placement program, so AP classes are limited in availability to the students.

Self-Reporting of Demographics

Self-reporting for gender, race, and SES on the surveys was assumed accuracy because there was no way to check the information without compromising the anonymity of the participant. Also, in selecting race, students were only provided with specific groups used by the College Board. Therefore, a student may have been forced to select the “best answer,” rather than the correct answer.

Summary

This study employs an Explanatory Sequential (QUAN→qual) Mixed Methods approach (Creswell, 2014). Conducting the study in three sequential phases, I first analyzed data sets specific to Indiana that were provided by the Indiana Department of Education (James, personal communication, 2016). This process established the foundational information of this study through simple mathematical computations comparing school population numbers to AP participation numbers. Upon full analysis of this data, Indiana high schools were ranked from least to most according to their equity gap percentage. Six schools ranking in either the top 5% or the bottom 5% were chosen for further research, with only one agreeing to participate in the study. The purpose of this selection process is twofold: (a) to establish factors that influence students’ choice to participate in an AP class, and (b) to identify school strategies that promote AP

participation among all racial, socioeconomic, and gender groups. All high school seniors over the age of 18, their parents or guardians, and school personnel in each school were asked to complete a survey, developed in Qualtrics through Ball State University. Follow-up interviews were conducted with school leadership to further explore survey responses. The third, and final phase, of the study provided additional quantitative data through independent t-tests, ANOVA, correlation analysis, and regression tests. Application of the qualitative data explored a more in-depth understanding of that data, which could not be measured quantitatively.

CHAPTER FOUR: RESULTS

Equity gaps in the Advanced Placement Program among specific demographic groups have been a research focus for several decades. Characteristically focused more on racial and socioeconomic inequities, research suggests that several factors may contribute to student participation in a school's AP program. Specifically, this study examined the areas of race, gender, socioeconomic status, intrinsic value, attainment value, self-concept of ability, cost, utility value, social consequence, and student perception of parent and teacher expectations.

Purpose of Study

The two main purposes of this study are to determine the effects of demographic variables and the reasons for AP participation. Specifically, this study examines the differences in Advanced Placement class participation in a large Indiana high school by race, socioeconomic status, and gender. Additionally, the study describes the reasons certain demographic groups in high schools may choose to not participate in the Advanced Placement program even though their ability levels would suggest a successful outcome. Several ideas will be discussed in an attempt to further explore these ideas. The concept of academic value will be reviewed within the context of Expectancy Value Theory (attainment value, intrinsic value, cost, and utility value) and three additional motivation paradigms (social consequence, expectations, self-concept of ability). The effects of government policies and incentives on school expectations within the context of school decisions regarding AP program promotion and offerings will also be reviewed. In addition, the area of socioeconomic status will be utilized to explore why an achievement gap exists among socioeconomic peers and to identify possible explanations

of this occurrence. It is my expectation to identify several Indiana high schools that are successfully minimizing, or unsuccessfully minimizing, the racial, socioeconomic, and gender gap in AP participation. Leadership practices of personnel in schools will be identified and analyzed to better understand the promotion strategies for Advanced Placement participation and success.

Research Questions

Demographic disparities in school participation and achievement heavily influence educational opportunities. Race, socioeconomic status, and gender are the three main groups that are consistently identified as variables contributing to the achievement gap (Klopfenstein, 2004; Ogbu, 2003; Corra, Carter, & Carter, 2011; Adelabu, 2007; Fowler, 2013; Aud, Fox, & Kewal Ramani, 2010; Ndura, Robinson, & Ochs, 2011). As such, four main research questions have been considered throughout this study.

1. How does student participation compare within and among each demographic group (i.e., SES, gender, and/or race)?
2. To what extent do students' demographic backgrounds and/or motivational patterns predict AP participation?
3. What are the different strategies stakeholders have taken to influence and promote AP participation among all racial, socioeconomic, and gender groups?

Aligning these questions to current literature addresses several key components concerning the Advanced Placement Program. Perspectives presented in this review will include parental and school personnel influence on student choice, as well as the role of Expectancy Value components and three additional motivational constructs. The lack of

academic value in urban schools despite rising AP enrollment numbers and determinants of course offerings, including government influence and policy, will also be discussed within the context of each of these areas. Each perspective demonstrates a unique but substantial component of the cycle of inequity within the AP Program, which needs significant attention to resolve.

This study highlights the racial, socioeconomic, and gender gaps present in Advanced Placement class participation in Indiana high schools. It also attempts to describe why certain demographic groups opt to participate in AP classes and others do not. I have researched the perceived academic benefit of AP classes in reference to students' intrinsic motivation and parental expectations, as well as other potential factors of influence. Additionally, the study explored potential explanations for gaps among socioeconomic peers, and further explored educational attitudes and practices of one Indiana high school that is not successfully minimizing the racial, socioeconomic, and gender gaps.

Participant Demographics

Participants in this study were primarily high school students, age 18 or older, currently enrolled as seniors at a large, public Indiana high school. Indiana Department of Education data for the 2016-2017 school year indicated 469 students enrolled in Grade 12 at this particular high school (2016), with 176 students receiving the survey due to the age limit requirement of the study. Participants also included high school teachers currently employed by the selected school. While it was requested that the survey be sent only to those currently teaching classes in which seniors were enrolled, the entire faculty (134 teachers) received the survey link. Both male and female students, as well as male

and female teachers, participated in the study. While students identified as White, Asian/Asian American, Hispanic, or Multiracial, teachers only identified as White. Student participants also indicated a range in socioeconomic status as determined by the federal guidelines for eligibility in the free or reduced lunch program. Teachers were not asked to identify their socioeconomic status, but did confirm that they were current teachers at the school.

This Indiana high school was selected for further study based on the equity gaps present in AP participation shown in Table 4. Some data provided through the IDOE's Compass website did not match the data provided in the requested spreadsheet. For example, Compass indicates that 49 students from the graduating class took an AP exam during the 2014-2015 school year, but the provided spreadsheet indicated that 42 students school-wide participated in an AP class (IDOE, 2016; James, personal communication, 2016). A possibility for the discrepancy may be due to the large amount of redacted information on the IDOE provided spreadsheet. Information is commonly redacted in state school reports when the number of participants is less than 10 to protect the anonymity of the student.

An overview of how AP participation looks at the state level is presented in Table 3. In general, only 11.92% of students in Indiana participated in an AP class during the 2014-2015 school year (James, personal communication, 2016). The majority of students are White females who are not eligible to receive free or reduced lunch program. The Hispanic ($N = 1543$) and Black ($N = 1486$) students are the next highest racial representation, but lowest racial equity gap is among Asian students, with over half of the population participating in AP classes.

Table 3

Comparison of Populations: State-wide AP Participation versus State Student Population, 2014-2015 School Year

Variable				
	Participation in	No Participation	% of	Equity
	AP Classes	in AP Classes	Participants per	Gap %
			Variable	
<u>Gender</u>				
Male	16069	141844	10.18	90.82
Female	21454	131461	14.03	85.97
Total	37044	273305	11.92	88.08
<u>Race</u>				
American Indian	53	189	28.04	71.96
Black	1486	6844	21.71	78.29
Asian	835	1413	59.09	40.91
Hispanic	1543	5395	28.60	71.40
White	19658	53651	36.64	63.36
Multiracial	782	2485	31.47	68.53
Native	22	49	44.90	55.10
American/Other Pacific Islander				
Total	24379	70026	34.81	75.19
<u>SES</u>				
Eligible for F/R Lunch	5004	23420	21.37	78.63
Not Eligible for F/R Lunch	19335	46217	44.74	55.26
Total	24339	69637	34.95	65.05

Table 4 illustrates the participation rates for the selected high school during the 2014-2015 school year. Participation is well below the state average in all demographic categories. However, the same pattern of the highest represented gender, race, and SES mirrors that state data. White, females who do not qualify for the free or reduced lunch program are the highest represented group among the school's population of students.

Table 4

Comparison of Populations at Participating School: School-wide AP Participation versus School Population, 2014-2015 School Year

Variable			<u>% of</u>	<u>Equity Gap</u>
	<u>Participation in</u>	<u>No Participation</u>	<u>Participants per</u>	<u>%</u>
<u>Gender</u>	<u>AP Classes</u>	<u>in AP Classes</u>	<u>Variable</u>	
Male	19	927	2.01	97.99
Female	23	863	2.60	97.40
Total (N=1832)	42	1790		
<u>Race*</u>				
White	36	859	2.01	97.99
Total (N=1832)	36	859		
<u>SES</u>				
Eligible for F/R Lunch	8**	1028	0.01	99.99
Not Eligible for F/R Lunch	34	796	4.27	95.73
Total (N=1832)	34	796		

Note: *AP data is redacted for groups of 10 or less participants. **Number was calculated based on other data provided by the IDOE.

Data Analysis

Research Question 1: Demographic Group Comparisons

The first research question analyzes the participation rates within and among the demographic groups of gender, race, and socioeconomic status. Data for this question was collected and analyzed in two separate phases for the purpose of identifying schools for further study and reporting school specific data.

Phase One. The first phase of data collected involved analyzing archival statistical data provided directly from the Indiana Department of Education pertaining to AP participation in all Indiana high schools for the 2014-2015 academic school year for which information was available. Specifically, this data included (a) the number of males

and females enrolled in AP classes per high school; (b) the number of students by race (White, African American/Black, Hispanic, Asian/Asian American/Pacific Islander, Native American/Alaska Native, multiracial, and other) enrolled in AP classes per high school; and (c) the number of free and reduced lunch students enrolled in AP classes per high school. Schools' participation rates in each category were compared to the total population numbers in each category to determine the equity gap percentage. This analysis was used to determine the top 5% and the bottom 5% of Indiana high schools to create the selection pool of schools for further study.

Table 5 provides a comparison of AP participation equity gaps present in Indiana schools for the 2014-2015 school year. The demographic groups are analyzed separately and ranked accordingly. Seventeen schools listed in the Top 5% exhibit equity gap percentages ranging from 49.93% to 77.66%. Calculations for School 1 are substantially lower, identifying it as an outlier and not representative of the other schools in the category. The eighteen schools listed in the Bottom 5% present equity gap percentages ranging from 95.39% to 98.35%, with no outlying schools.

Table 5

Comparison of Equity Gaps in Indiana Schools for the 2014-2015 School Year Featuring the Top 5% and Bottom 5% of Public High Schools

Category						
	<u>Gender –</u> <u>Total % AP</u> <u>Participants</u>	<u>Gender –</u> <u>Total %</u> <u>Equity</u> <u>Gap</u>	<u>Race –</u> <u>Total % AP</u> <u>Participants</u>	<u>Race –</u> <u>Total %</u> <u>Equity</u> <u>Gap</u>	<u>SES –</u> <u>Total % AP</u> <u>Participants</u>	<u>SES –</u> <u>Total %</u> <u>Equity</u> <u>Gap</u>
<u>Top 5%</u>						
School 1	94.46	3.54	80.39	19.61	90.63	9.37
School 2	49.53	50.47	50.07	49.93	49.53	50.47
School 3	38.14	61.86	36.82	63.18	38.35	61.65
School 4	35.18	64.82	31.97	68.03	35.18	64.82
School 5	32.53	67.47	31.11	68.89	32.53	67.47
School 6	30.99	69.01	30.82	69.18	31.09	68.91
School 7	30.81	69.19	29.35	70.65	30.81	69.19
School 8	30.37	69.63	28.09	71.91	30.37	69.63
School 9	28.90	71.10	27.89	72.11	28.90	71.10
School 10	27.52	72.48	27.58	72.42	27.52	72.48
School 11	27.43	72.57	27.46	72.54	27.43	72.57
School 12	27.36	72.64	26.28	73.72	27.36	72.64
School 13	26.11	73.89	25.05	74.95	26.11	73.89
School 14	24.77	75.23	24.34	75.66	24.77	75.23
School 15	24.19	75.81	24.02	75.98	24.19	75.81
School 16	23.93	76.07	23.53	76.47	23.93	76.07
School 17	22.47	77.53	22.43	77.57	23.43	76.57
School 18	22.34	77.66	22.43	77.57	22.47	77.53
<u>Bottom 5%</u>						
School 1	4.61	95.39	2.87	97.13	2.78	97.22
School 2	4.52	95.48	2.83	97.17	2.72	97.28
School 3	4.50	95.50	2.62	97.38	2.69	97.31
School 4	4.50	95.50	2.62	97.38	2.68	97.32
School 5	4.40	95.60	2.58	97.42	2.67	97.33
School 6	4.32	95.68	2.52	97.48	2.65	97.35
School 7	4.22	95.78	2.44	97.56	2.61	97.39
School 8	4.22	95.78	2.35	97.65	2.54	97.46
School 9	4.11	95.89	2.35	97.65	2.29	97.71
School 10	4.08	95.92	2.08	97.92	2.21	97.79
School 11	3.98	96.02	2.05	97.95	2.21	97.79
School 12	3.93	96.07	2.01	97.99	2.12	97.88
School 13	3.81	96.19	1.99	98.01	2.02	97.98
School 14	3.43	96.57	1.98	98.02	2.01	97.99
School 15	3.41	96.59	1.43	98.57	1.82	98.18
School 16	3.33	96.67	1.31	98.69	1.65	98.35
School 17	3.09	96.91	1.28	98.72	1.65	98.35
School 18	2.29	97.71	1.03	98.97	1.39	98.61

Eighteen Indiana high schools were identified in the top 5% of schools successfully minimizing equity gaps in gender, race, and socioeconomic status (SES), with gap percentages ranging from 50.5% to 77.6% in gender; 50% to 77.6% in race; and 50% to 77.5% in SES. One public Indiana high school consistently ranked first in all three categories with equity gaps of 3.45% in gender; 21% in race; and 9% in SES. This school was not considered for further research in this study due to the extreme difference in their equity gaps comparative to the other top performing Indiana high schools. Additionally, sixteen of the eighteen schools showed high participation in each category, with the other two schools also ranking high in the gender and race categories.

Eighteen Indiana high schools were also identified in the bottom 5% of schools successfully minimizing equity gaps in gender, race, and socioeconomic status. Unlike the top 5%, however, only one high school showed low participation in all three categories. Equity gap percentages for this group of schools ranged from 95.4% to 97.7% in gender, 97% to 99% in race; and 97% to 99% in SES.

Phase Two. The second phase of data analysis for the first research question involved an analysis of student answers provided through a survey by the participating Indiana high school. While 157 surveys were returned (89% completion rate), only 44 students finished the survey to completion and answered the demographic questions (26% completion rate). Table 6 illustrates a comparison of state-wide AP participation in relationship to AP participation at the selected school.

Table 6

Comparison of Populations: State-wide AP Participation versus Survey Completer AP Participation

Variable		
	State AP Participation %	Survey Completer AP Participation %
<u>Gender</u>		
Male	43.38	38.6
Female	56.62	61.4
Total	100	100
<u>Race</u>		
American Indian	0.22	0
Black	6.10	0
Asian	3.43	2.27
Hispanic	6.33	25.0
White	80.63	70.5
Multiracial	3.21	2.27
Native American/Other Pacific Islander	0.09	0
Total	100	100
<u>SES</u>		
Eligible for F/R Lunch	20.56	31.8
Not Eligible for F/R Lunch	79.44	52.3
Total	100	84.1*

Note. *Some students did not know their eligibility.

As documented in Table 7, thirteen of the 44 students are currently enrolled in an AP class. Within that group, four students identified as male, and nine students identified as female. Additionally, four students self-identified as eligible to receive free or reduced school lunch, with seven students selecting that they were not eligible to receive free or reduced school lunch. Two students did not know if they were eligible to receive free or reduced lunch. Students were asked to select their race from the five racial groups that are used on Advanced Placement exams. Students self-identified themselves as White, Asian or Asian American, Hispanic, and Multiracial.

Table 7

Comparison of Populations: Survey Completers: AP Participants (N=13) versus AP Non-Participants (N=31)

Variable	Participation in AP	No Participation in	
	Classes	AP Classes	%
<u>Gender</u>			
Male	4	13	38.6
Female	9	18	61.4
Total (N=44)	13	31	
<u>Race</u>			
White	12	19	70.5
Asian or Asian American	0	1	2.27
Hispanic	1	10	25.0
Multiracial	0	1	2.27
Total (N=44)	13	31	
<u>SES</u>			
Eligible for F/R Lunch	4	10	31.8
Not Eligible for F/R Lunch	7	16	52.3
Do Not Know Eligibility	2	5	15.9
Total (N=44)	13	31	

Note. The option to select African American was available but not selected by any students.

Research Question 2: AP Participation Factors

The second research question examines how students' demographics and/or motivational patterns further shape their participation in Advanced Placement classes. As previously discussed, students were asked to respond to Likert scale questions in the areas of intrinsic value, attainment value, utility value, self-concept of ability, social consequence, cost, and parent and teacher expectations. These questions were intermixed throughout the survey in an effort to prevent monotony in the questioning sequence.

Each construct of questions was analyzed independently of the other constructs in the areas of gender, race, and socioeconomic status. Each was also analyzed separately between AP participants and non-participants.

Demographic Groups. With only 46 participants completing the demographic questions on the student survey, analyzing the data through this lens substantially lowered the amount of serviceable data. As documented in Table 3, there were more females than males who completed the study, and a majority of the participants self-identified as White (77.7%). The SES numbers were more evenly distributed within the groups of AP participants and non-participants, but not between them. While this may present as substantial disparity, the lack of racial identification carried more weight in how the data was analyzed.

Gender. Student participants were asked to self-identify their gender as male or female. More females (61.4%) than males (38.6%) completed the survey (Table 8). Interestingly, while female survey participation was substantially higher, female participation in AP classes just slightly outnumbered male participation in AP classes.

Table 8

Comparison of Survey Completers to School Demographics: Gender

Gender	Frequency	Percent of AP Participants	Number of Total Respondents	Percent of Total Respondents
Male	4	30.77%	17	23.53%
Female	9	69.23%	29	31.03%
Total	13	100%	46*	28.26%

Note. *111 students did not identify as male or female.

A binary logistic regression analysis was calculated to predict AP participation based on gender. Results showed no significance between the two variables ($p = .586$),

and only accounts for 0.9% of the variance in AP participation ($R^2 = .009$). Simple linear regression analyses were also calculated to predict if gender has an effect on a student's level of attainment value, intrinsic value, cost, utility value, expectations, social consequence, or self-concept of ability (Table 9). A non-significant result was found between gender and all motivational constructs. Results indicate that gender accounts for 22.2% of variance in cost ($R^2 = .222$).

Table 9

Summary of Simple Linear Regression Analysis for Gender Predicting Student Motivation Variables

Predictor Variable	<u>B</u>	<u>SE B</u>	<u>β</u>	<u>p</u>	<u>R^2</u>
Attainment Value	-.236	.334	-.108	.483	.012
Intrinsic Value	-.367	.271	-.205	.183	.205
Social Consequence	.051	.366	.022	.890	.022
Expectations	.130	.354	.056	.716	.056
Self-Concept of Ability	.316	.246	.194	.206	.194
Cost	-.528	.358	-.222	.148	.222
Utility Value	-.051	.281	-.028	.856	.028

Socioeconomic Status. Students were asked to identify their socioeconomic status by selecting one of three statement options: (a) I am eligible to receive free or reduced lunch at school; (b) I am not eligible to receive free or reduced lunch at school; or (c) I do not know if I am eligible to receive free or reduced lunch at school. Table 10 shows how the survey participants compared to the senior class SES demographic. Students who are eligible to receive free or reduced lunch at school are underrepresented

in the survey, as compared to their “paid lunch” counterparts, who are slightly overrepresented.

Table 10

Comparison of Survey Completers to School Demographics: SES

SES	Frequency	Percent of Survey Participants	Senior Class Total	Percent of Senior Class Total
Free & Reduced Lunch	14	30.43%	207	48.4%
Paid Lunch	25	54.35%	221	51.6%
Total	39*	84.78%	428	100%

Note. *Seven students did not know if they were eligible for free or reduced lunches at school.

Examining AP class participation through SES shows a similar distribution between free and reduced lunch eligibility and paid lunch when comparing the total number of survey respondents in each area. However, there is a higher representation of “paid lunch” students participating in AP classes than free and reduced lunch students.

Table 11

AP Participation of Survey Completers by SES

SES	Frequency	Percent of AP Participants	Number of Total Respondents	Percent of Total Respondents
Eligible for F/R lunch	4	30.77%	14	28.57%
Not Eligible for F/R Lunch	7	53.85%	25	28%
Do Not Know Eligibility for F/R Lunch	2	15.38%	7	28.57%
Total	13	100%	46	28.26%

Note. F/R = free and reduced

A binary logistic regression analysis was calculated to predict AP participation based on SES levels. Results showed no significance between the level of SES selected and AP participation ($p = 1.00$; $p = .976$). Simple linear regression analyses were also calculated to predict if SES has an effect on a student's level of attainment value, intrinsic value, cost, utility value, expectations, social consequence, or self-concept of ability. No significance was found between SES and the motivational constructs, as shown in Table 12. Results indicate that SES accounts for 28.4% of the variance in social consequence ($R^2 = .284$).

Table 12

Summary of Simple Linear Regression Analysis for SES Predicting Student Motivation Variables

Predictor Variable	<u>B</u>	<u>SE B</u>	<u>β</u>	<u>p</u>	<u>R²</u>
Attainment Value	-.101	.070	-.217	.158	.217
Intrinsic Value	-.022	.059	-.056	.716	.056
Social Consequence	-.144	.075	-.284	.062	.284
Expectations	.064	.075	.129	.404	.129
Self-Concept of Ability	-.009	.054	-.027	.864	.027
Cost	-.040	.078	-.078	.615	.078
Utility Value	.002	.060	.004	.979	.004

Race. Among the 46 participants who completed the demographic questions, 77.7% ($N=33$) identified as White, while 23.9% ($N=11$) identified as Hispanic. One student selected Asian or Asian American, and one other student selected Multiracial. A one-way ANOVA was conducted to determine if a student's choice to participate in an AP class was dependent on his or her race. A Test of Homogeneity of Variance showed an inequality of variances in the race sample ($p < .05$), resulting in a rejection of the null hypothesis that an equal variance exists between all variables. Brown-Forsythe and Welch tests were not calculated because at least one group had zero variance. As such, further statistical analysis could not be performed on the data with any certainty that the results would not be skewed by the inequality of variances.

A one-way ANOVA was then conducted to determine if a students' race affects their perception of attainment value, intrinsic value, social consequence, expectations, self-concept of ability, cost, or utility value. The Test of Homogeneity of Variances showed homoscedasticity, resulting in an acceptance of the null hypothesis. The one-way

ANOVA showed a significant relationship between race and students' perceptions of social consequence ($p = .022$).

In an attempt to determine if selecting White or Hispanic had any affect on AP participation or students' perceptions of the predictors, the selections of Asian or Asian American and Multiracial in the race category were recoded in SPSS as "Other." A Levene's test showed an equality of variances in the race sample ($p > .05$), resulting in an acceptance of the null hypothesis as it pertained to AP participation in students and the different constructs. Neither analysis, however, showed that race had a significant effect on AP participation or the different constructs.

As such, a third analysis was run with only the data for White ($N=33$) and Hispanic ($N=11$) participants. Simple linear regression analyses were also calculated to predict if selecting White or Hispanic had a significant effect on a student's level of attainment value, intrinsic value, cost, utility value, expectations, social consequence, or self-concept of ability. As shown in Table 13, the results indicate a significant relationship between identifying as either White or Hispanic and the social consequence construct ($p = .033$) and accounts for 32.9% of the variance in social consequence ($R^2 = .329$). No other significance was found.

Table 13

Summary of Simple Linear Regression Analysis for Race Predicting Student Motivation Variables

Predictor Variable	B	<i>SE B</i>	β	<i>p</i>	R^2
Attainment Value	-.084	.075	-.175	.268	.175
Intrinsic Value	-.001	.062	-.002	.989	.002
Social Consequence	-.167	.075	-.329	.033*	.329
Expectations	.109	.077	.217	.167	.217
Self-Concept of Ability	.007	.055	.019	.906	.019
Cost	-.050	.085	-.093	.559	.093
Utility Value	.011	.065	.028	.861	.028

Note. * $p < .05$

Because of the small sample size, a non-parametric two independent samples test was run to verify the result of the second independent t-test that showed a significant effect of race on social consequence. The Mann-Whitney test typically serves as the nonparametric alternative to the parametric independent samples t-test when data is “non-normally distributed” (Laerd Statistics, 2013). Four assumptions must be met in order to run this test: (a) there is one dependent variable, measured as continuous or ordinal; (b) there is one independent variable that is dichotomous (i.e.- White or Hispanic); (c) participants are only represented in once group; and (d) the shape of the distribution of scores must be determined for each independent variable to determine how the results are interpreted. With all assumptions met, the Mann-Whitney test confirmed that identifying as White or Hispanic has a significant effect on the social consequence construct ($U = 87$, $p = .016$).

Constructs

Analyzing the data through a construct lens increased the available data to 125 participants, a much larger sample size than the demographic group, as shown in Table 14. The frequency per construct illustrates how many participants answered questions in each category. The total number of respondents indicates the number of students who answered questions, but not necessarily in each construct. Each construct was analyzed in conjunction with AP class participation or non-participation to determine predictability levels through logistic regression. Additionally, correlation between constructs was examined using the bivariate analysis.

Table 14

Comparison Questions Completed: Demographics versus Motivational Constructs

<u>Demographics</u>	<u>Frequency</u>	<u>Percent of Survey Participants</u>
Gender	46	29.49%
Race	44	28.21%
SES	46	29.49%
Total Respondents	46	29.49%
<u>Constructs</u>		
Attainment Value	80	51.28%
Intrinsic Value	80	51.28%
Social Consequence	80	51.28%
Expectations	80	51.28%
Self-Concept of Ability	79	50.64%
Cost	51	32.69%
Utility Value	46	29.49%
Total Respondents	125	80.13%

Constructs As Predictors. The constructs of attainment value, intrinsic value, social consequence, expectations, self-concept of ability, cost, and utility value were analyzed through a binary logistic regression model to determine the predictability on AP

participation. As documented in Table 15, three constructs (expectations, self-concept of ability, and utility value) were found to have significance in predicting AP participation in students.

Table 15

Summary of Logistic Regression Analysis for Variables Predicting Students' Decisions Regarding AP Participation or Non-Participation

Variable	B	<i>p</i>	OR
Attainment Value	.869	.290	2.385
Intrinsic Value	.873	.410	2.395
Social Consequence	.422	.336	1.525
Expectations	-1.730	.040*	.177
Self-Concept of Ability	2.754	.017*	15.703
Cost	-.949	.052	.179
Utility Value	-1.721	.037*	.040

Note. * $p < .05$. OR = odds ratio

The construct of self-concept of ability has a positive effect ($B=2.754, p < .05$) on predicting student participation in AP courses. This indicates that students who have a positive self-concept of their own ability are likely to participate in an AP class. The constructs of expectations ($B = -1.730, p < .05$) and utility value ($B= -1.721, p < .05$) have a significant negative effect on predicting student participation in AP courses. These results indicate that students who have a low or negative view of expectations and utility value are less likely to participate in an AP class.

The odds ratio (OR) “is a measure of association between an exposure and an outcome” (Szumilas, 2010). An odds ratio equal to one is considered to have no effect on the outcome. If an odds ratio is greater than one, the effect will increase the odds of the outcome occurring; while an OR of less than one decreases the odds of the outcome occurring. From this data, it can be assumed that a student with a high self-concept of

ability has 15.703 times the likelihood of taking an AP course in high school. A student who has little or no exposure to teacher and parent expectations is less likely to participate in an AP class ($OR = .177$), as is a student who does not view AP classes to have utility value or relevance to his or her learning ($OR = .040$).

Correlation Among Constructs. It has been established that some individual constructs play a significant role, whether positively or negatively, in predicting a student's decision to participate in an AP class. A bivariate correlation analysis was conducted to examine any significant correlation between constructs, to determine how student beliefs may be connected. For example, if a student has a high or positive attainment value level, does he or she also have a high or positive intrinsic level? The opposite could also occur. If a student has a low or negative attainment value, does he or she also have a low or negative intrinsic level?

Table 16

Correlation of Constructs

Variables	AV	IV	SC	EXP	SCA	C	UV
AV	-						
IV	.824**	-					
SC	.112	-.015	-				
EXP	.515**	.505**	.119	-			
SCA	.399**	.383**	-.072	.512**	-		
C	.211	.229	.065	-.038	-.023	-	
UV	.745**	.788**	.022	.414*	.316*	.294*	-

Note. **Correlation is significant at the 0.01 level (2-tailed). *Correlation is significant at the 0.05 level (2-tailed). AV=attainment value; IV=intrinsic value; SC=social consequence; EXP=expectations; C=cost; UV=utility value

A bivariate correlation analysis indicated a significant correlation between several constructs (Table 16). There are strong correlations between attainment value and intrinsic value ($r = .824, p = .000$); attainment value and expectations ($r = .515, p =$

.000); attainment value and self-concept of ability ($r = .399, p = .000$); and attainment value and utility value ($r = .745, p = .000$). Positive correlations are also present between intrinsic value and expectations ($r = .505, p = .000$); intrinsic value and self-concept of ability ($r = .383, p = .000$); and intrinsic value and utility value ($r = .788, p = .000$). The expectations construct is positively correlated with self-concept of ability ($r = .512, p = .000$), as well as with utility value ($r = .414, p = .004$). A positive correlation exists between self-concept of ability and utility value ($r = .316, p = .032$). Cost is also positively correlated to utility value ($r = .294, p = .047$).

Results indicate that while specific constructs are strongly correlated, they do not all necessarily predict participation in AP classes. However, it is possible that the correlation between constructs plays some role in the significance of expectations, self-concept of ability, and utility value on AP participation. Further analysis was conducted through a linear regression model to determine the variance inflation factor (VIF), which quantifies the severity of the multicollinearity (Table 17). Through multiple rounds of analysis in which each construct served as the dependent variable at least once, the attainment value and intrinsic value predictors were the only variables in which a VIF greater than 3 but less than 6 was consistently computed. A single criterion for VIF does not exist, although many researchers use the $VIF > 10$ rule to indicate severe multicollinearity (O'Brien, 2007; de Jongh, de Jongh, Pienaar, Grodon-Grant, Oberholzer, & Santana, 2014). It is suggested that removing the predictors with high collinearity would eliminate this issue (Tabachnick & Fidell, 2007). With the lack of consistency in research regarding accepted VIF criteria, it is noted that a larger sample size and further analysis into this issue is needed before it can be adequately resolved.

Table 17

Linear Regressions of Constructs with Variance Inflation Factors

Dependent Variable	Independent Variable	VIF
Attainment Value	Intrinsic Value	3.126
	Social Consequence	1.047
	Expectations	2.287
	Self-Concept of Ability	2.004
	Cost	1.181
Intrinsic Value	Utility Value	2.838
	Social Consequence	1.061
	Expectations	2.215
	Self-Concept of Ability	2.095
	Cost	1.178
Social Consequence	Utility Value	2.607
	Attainment Value	2.633
	Expectations	2.330
	Self-Concept of Ability	2.088
	Cost	1.181
Expectations	Utility Value	2.902
	Attainment Value	4.724
	Intrinsic Value	5.688
	Self-Concept of Ability	1.304
	Cost	1.145
Self-Concept of Ability	Utility Value	2.943
	Attainment Value	4.683
	Intrinsic Value	5.387
	Social Consequence	1.057
	Cost	1.191
Cost	Utility Value	2.958
	Attainment Value	4.580
	Intrinsic Value	5.687
	Social Consequence	1.057
	Expectations	1.456
Utility Value	Utility Value	2.835
	Attainment Value	4.759
	Intrinsic Value	5.635
	Social Consequence	1.054
	Expectations	2.254
	Self-Concept of Ability	2.099
	Attainment Value	4.548
	Intrinsic Value	4.962
	Social Consequence	1.030
	Expectations	2.303
	Self-Concept of Ability	2.074
	Cost	1.127

Research Question 3: Strategies and Support of Key Stakeholders

The third research question identifies specific strategies in place at the school level to help influence and promote AP participation among all racial, SES, and gender groups within Indiana high schools. It also examines how key stakeholders support students in their decision-making process concerning AP classes. Through teacher surveys and administrator interviews, several themes emerged pertaining to potential stakeholder influence on students.

Teachers were provided with anecdotal scenarios and asked to rate how likely they were to recommend the student for an AP class. Two scenarios were written using names to indicate gender and race (Conaway & Bethune, 2015). A third scenario was written to indicate two SES situations. Due to the low number of responses, some of the scenarios were not provided as options to the survey participants, so conclusions cannot be effectively drawn to indicate a pattern of response per demographic situation but could serve as the framework for preliminary exploration. Teachers, however, did provide explanations, which speak to the support they would offer students in making coursework decisions.

When presented with a gender specific scenario, teachers spoke about encouraging both the male and female to pursue AP classes based on the described student characteristics. One teacher specifically mentioned speaking to the student about college and taking classes to assist with college success. Both the female and male students were rated with the same likelihood; although more teachers received the male scenario.

A second scenario indicating racial differences provided feedback that is more diverse than the first scenario. Names were used to indicate a specific race (Conaway & Bethune, 2015), but the general scenario was the same. Questions indicating African American, Hispanic, White, and Asian or Asian American were presented to survey participants. Due to the low number of responses, the question indicating Pacific Islander was not provided as a scenario. Four participants received the question indicating the student's race as African American. Two received the question indicating the student's race as Hispanic. One received the question indicating White as the race, and two received the question indicating Asian or Asian American as the race (Table 18). The primary focus of each explanation was academic ability and student motivation. Five of the respondents said they would encourage AP participation for several reasons: (a) providing a good learning environment that would encourage the child; (b) providing more rigorous instruction to challenge the child; and (c) to provide a different venue of learning for the child. Two respondents expressed a strong desire for the child to show motivation without teacher interference, while two others did not provide an explanation.

Table 18

Distribution of Anecdotal Race Questions on Teacher Survey

Race Scenario Presented	Frequency
African American	4
Asian/Asian American	2
Hispanic	2
Pacific Islander	0
White	1

The final question provided a scenario that indicated two different levels of socioeconomic status. Six participants received the question indicating a low SES; while

three received the one indicating an affluent situation. Six of the teachers responded that they would encourage participating in an AP class for both the challenge and engagement that it could offer the student. Two teachers, again, expressed the desire for the student to find his or her own motivation to pursue AP classes, while one abstained from answering.

The willingness of teachers to cross demographic lines to encourage students to pursue more rigorous coursework was echoed in the principal interviews that were conducted. With a primarily academic goal to be 100% graduation for the high school, the principal spoke about the school's efforts to make that goal a reality. While this includes offering AP classes and exams for students, the school also provides a full International Baccalaureate (IB) program and Advanced College Placement (ACP) classes, which provides a dual credit opportunity through two different state colleges.

When asked specifically about promoting AP classes, the principal stated that it is done primarily through the teachers who teach those classes since they are also teaching the prerequisite classes. Current AP students also help promote the program by informally speaking to younger students with the same class interests. "And they find out from their counselor or they find that out through their coursework leading up to that, like Drawing and 2-D art people would talk about 3-D art as an AP program" (personal interview, January 24, 2017). Acknowledging that more could be done in that area, the principal stated that the true focus is on the IB program and, thus, more promotion effort is made in that area.

To support AP, and other programs at the school, GHS developed a program known as Student Resource Time (SRT). The program matches students with a teacher for their entire four-year high school career, meeting every other day for 90 minutes. The

idea behind the program is for students to build a relationship with the teachers who help guide them throughout their years at the school. A recently completed high school survey of student engagement, according to the principal, showed that 67.7% of the students had discussions with their teachers regarding their coursework, showing that the SRT program does influence student choice. Even so, the principal acknowledges that parents play a large role in student decision-making. “A lot of our kids have parents that they spend a lot of time with, which we are in support of” (personal interview, January 24, 2017). Social consequence also factors in, though. The principal discussed that students who socialize with other students who value rigor in their education will likely adopt those values as well.

Summary

The data analyzed within the three research questions show a significant effect in specific constructs predicting student participation in an AP course. Self-concept of ability emerged as the strongest positive predictor in this area, indicating the importance of a student’s belief in himself or herself. Positive correlations between eleven construct arrangements could indicate a need to foster growth in several belief areas, especially in schools ranking in the Bottom 5% for AP participation in Indiana. Staff surveys and interviews enhance the quantitative results by explaining the strategies in place to influence and promote AP participation among all demographic groups. The lack of significance within and among demographic groups shows that the school is reaching all students equally. Student success is at the core of the school’s mission, which is more focused on providing a rigorous academic curriculum, rather than specifically promoting the AP program. Teacher-student mentoring helps develop relationships, which in turn

build student beliefs about themselves and can contribute to AP class participation. It is a cyclical process aimed ultimately at student success and focused primarily on the student rather than the coursework.

CHAPTER FIVE: CONCLUSIONS

The issues of racial, socioeconomic, and gender disparities within school programs have long plagued the American educational system. While the landscape of education has changed noticeably in the past 100 years, these disparities still exist in school districts across the United States. Specific to the secondary school level, research has focused on racial, socioeconomic, and gender inequalities within the Advanced Placement Program offered at most American high schools. Traditionally, College Board's main concern, as it pertains to expanding student opportunity, focused on the continuing racial inequities among program participants, but added equity gap information for low-income students in 2014 in response to research studies that linked a child's academic success to parental income (2014b). Gender equity gaps have yet to be included in College Board research and reports, but several research studies address this issue within the context of race and socioeconomic status (College Board, 2015c; Fatum, 2013; Moller & Stearns, 2012; Corra, Carter, & Carter, 2011; Conger, Long, & Iatarola, 2009; Hubbard, 2005).

Overview of the Problem

Racial, socioeconomic, and gender gaps exist in Advanced Placement course participation (College Board, 2014a, 2014b; Fatum, 2013; Moller & Stearns, 2012; Corra, Carter, & Carter, 2011; Conger, Long, & Iatarola, 2009; Hubbard, 2005). Although the AP program has increased nationally in availability, these gaps remain prevalent in American high schools. Past research has shown that several factors may influence students' participation in AP courses, such as parent expectations, school expectations, government incentives, and intrinsic motivation. Information on the degree to which

these factors influence students' AP participation choices is scarce and typically limited to a selected population. It is also unclear how some high schools maintain more equitable AP enrollment, while others continue to struggle.

Purpose of Study

The two main purposes of this study are to determine the effects of demographic variables and the reasons for AP participation. Specifically, this study examines the differences in Advanced Placement class participation in a large Indiana high school by race, socioeconomic status, and gender. Additionally, the study describes the reasons certain demographic groups in high schools may choose to not participate in the Advanced Placement program even though their ability levels would suggest a successful outcome. Several ideas will be discussed in an attempt to further explore these ideas. The concept of academic value will be reviewed within the context of Expectancy Value Theory (attainment value, intrinsic value, cost, and utility value) and three additional motivation paradigms (social consequence, expectations, self-concept of ability). The effects of government policies and incentives on school expectations within the context of school decisions regarding AP program promotion and offerings will also be reviewed. In addition, the area of socioeconomic status will be utilized to explore why an achievement gap exists among socioeconomic peers and to identify possible explanations of this occurrence. It is my expectation to identify several Indiana high schools that are successfully minimizing, or unsuccessfully minimizing, the racial, socioeconomic, and gender gap in AP participation. Leadership practices of personnel in schools will be identified and analyzed to better understand the promotion strategies for Advanced Placement participation and success.

Research Questions

It is difficult to conduct research in the field of education without discussing the pattern of demographic disparities in school participation and achievement. Race, socioeconomic status, and gender are the three main groups that are consistently identified as variables contributing to the achievement gap (Klopfenstein, 2004; Ogbu, 2003; Corra, Carter, & Carter, 2011; Adelabu, 2007; Fowler, 2013; Aud, Fox, & Kewal Ramani, 2010; Ndura, Robinson, & Ochs, 2011). As such, three main research questions have been considered throughout this study.

1. How does student participation compare within and among each demographic group (i.e., SES, gender, and/or race)?
2. To what extent do students' demographic backgrounds and/or motivational patterns predict AP participation?
3. What are the different strategies stakeholders have taken to influence and promote AP participation among all racial, socioeconomic, and gender groups?

Aligning these questions to current literature addresses several key components concerning the Advanced Placement Program. Perspectives presented in this review will include parental and school personnel influence on student choice, as well as the role of Expectancy Value components and three additional motivational constructs. The lack of academic value in urban schools despite rising AP enrollment numbers and determinants of course offerings, including government influence and policy, will also be discussed within the context of each of these areas. Each perspective demonstrates a unique but

substantial component of the cycle of inequity within the AP Program, which needs significant attention to resolve.

This study highlights the racial, socioeconomic, and gender gaps present in Advanced Placement class participation in Indiana high schools. It also attempts to describe why certain demographic groups opt to participate in AP classes and others do not. I have researched the perceived academic benefit of AP classes in reference to students' intrinsic motivation and parental expectations, as well as other potential factors of influence. Additionally, the study explored potential explanations for gaps among socioeconomic peers, and further explored educational attitudes and practices of one Indiana high school that is not successfully minimizing the racial, socioeconomic, and gender gaps.

Review of Research Methods

Data for this study was collected in two phases, using the explanatory sequential mixed-methods approach. The initial phase of this study involved an analysis of archival data from the Indiana Department of Education to select high schools for further study. The second phase of this study required new data to be collected to address the research questions pertaining to influences and expectations at varying levels. This was achieved through surveys and interviews. The student and parent surveys were an adaptation of the Childhood and Beyond (CAB) questionnaires (1990, 1991, & 1998) and the Valuing of Education (VOE) Scale (Battle & Wigfield, 2003; Hagemeyer & Murawski, 2014). Alterations applied to these surveys were approved and are discussed in Chapter 3.

The teacher survey consisted of anecdotal questions with open-ended responses, specifically to address the issue of potential bias in the classroom. These questions were

not adapted from another survey; however, questions “included names of racial and ethnic origin” to indicate “stereotypical recognition” and were gender specific (Conaway & Bethune, 2015).

A semi-structured interview protocol was also developed to serve as a follow-up to the Qualtrics survey. The development of these questions was guided by survey responses that required further explanation at the leadership level.

Limitations of the Study

School Participation

A major limitation to this study was finding schools willing to participate in my study. Six separate high schools were contacted an average of four times via email and phone between September 2016 and January 2017, including contacts on my behalf by my dissertation advisor. Still, only one agreed to participate. This lowered the number of teachers, parents, and students available to participate in the study and removed the opportunity for a multi-school comparative analysis.

Language Barrier

The selected school houses the highest number of Spanish-speaking students in the state of Indiana, with several participants speaking English as a second language. This may have contributed to language confusion while answering survey questions. For example, the term *advanced placement* and its abbreviation (*AP*) are used frequently throughout the survey to refer to classes specifically offered through the College Board program. It was assumed that students would interpret this term as it was intended, but

particular answers suggest that some participants confused it with generic honors classes or International Baccalaureate classes.

Additionally, the principal shared that many of the parents who received the parent survey spoke limited English. At his recommendation, the survey and survey reminders were sent in English only. No parent surveys were completed.

Survey Length

Student Survey. The student survey consisted of 43 questions, with a predicted completion time of 20 minutes. Only nine of the 44 questions were required. Six of these questions were placed at the beginning of the survey, while the three demographic questions were listed as the final questions. Only 44 of the 155 student respondents answered the required demographic questions. This was most likely due to the placement of the questions within the survey, as well as, to the length of the survey.

Parent Survey. The parent survey consisted of 45 questions, with a predicted completion time of 22 minutes. The length of the survey might have dissuaded participation. During his interview, the principal explained that school parents with limited English knowledge do not often respond to requests. My offer to translate the survey into Spanish was rejected based on the principal's insistence that it would not improve my chances of survey completion among parents. No parent surveys were completed.

Teacher Survey. The teacher survey consisted of 14 questions, with a predicted completion time of 12 minutes. Three questions focused specifically on anecdotal situations applying directly to student gender, race, and socioeconomic status. Additionally, three questions asked for an explanation of the answers provided to the

previous three questions. The range in the number of teacher responses might have resulted from a recognized intent to show teacher bias, or a lack of interest in the question. Few teachers expounded on their answers to either recommend or not recommend a student for an AP class.

Another limitation of the teacher survey involved teacher responses, which were given in the context of their current teaching positions at the school. This specific school promotes the International Baccalaureate program, another rigorous high school pathway, instead of the Advanced Placement program, so AP classes are limited in availability to the students.

Self-Reporting of Demographics

Self-reporting for gender, race, and SES on the surveys was assumed accuracy because there was no way to check the information without compromising the anonymity of the participant. Also, in selecting race, students were only provided with specific groups used by the College Board. Therefore, a student may have been forced to select the “best answer,” rather than the correct answer.

Findings Related to the Literature

Equity gaps within the Advanced Placement (AP) Program have been the subject of research for several years. Despite the continuing growth in the program, equity gaps continue to exist in the areas of gender, race, and socioeconomic status (Fowler, 2013; Schneider, 2009; Rothschild, 1999). Research notes that several influences can contribute to AP participation rates among these demographic groups. The findings of this study both support and contradict research done nationally and statewide.

Academic Value

Academic value, as defined in Chapter 2, refers to the received benefit of an AP class, either as a challenge or as a potential higher education credit. Research argues that disadvantaged and minority groups receive less academic value from an AP class than advantaged groups (Klopfenstein, 2004; Wildhagen, 2013). Results from this study confirm a higher enrollment rate of White students than minority students (Table 7) and a higher enrollment rate for students with a higher SES (Table 10).

Intrinsic Motivation and Value

Research suggests that students who participate in an AP class have a higher intrinsic motivation than those who do not (Bryan, Glynn, & Kittleson, 2011). Defined as the selection of an activity because one enjoys it, intrinsic motivation drives students to attain a goal of personal value (Vroom, 1964; Eccles, 1983; Estes & Polnick, 2012; Wigfield, 1994). Results from this study do not indicate a significant effect of intrinsic value on AP participation, which may be due to the strong correlation of this construct to the attainment value construct (Table 15).

Social Consequence

Social consequence is primarily discussed in research through a Critical Race Theory lens, specifically focused on minority groups (Tucker, 2008; Ogbu, 2003; Corra, Carter, & Carter, 2011). The consensus is that minority females are more likely to pursue AP coursework than their male counterparts, because they are more likely view it as valuable and less likely to be concerned with being accused of “acting White” or working outside social conventionalities (Adelabu, 2007; Moore & Slate, 2008; Ogbu, 2003).

Results from this study confirm more females enrolled in AP class than males (Table 7), but do not support that effect of social consequence on AP participation rates (Table 14).

Policy and Incentives

Several states have policies regarding Advanced Placement classes in high schools. Many offer incentives to teacher and students as a way to help promote the use of the program. In the State of Indiana, all public high schools to offer at least two Advanced Placement classes in their schools (IC 20-30-10-4) and schools are allowed to supplement teacher pay if they teach AP classes (IC 20-29-9-1.5). Schools are specifically encouraged to provide AP courses in math and science, by appropriating money to implement the program for students who are enrolled in public high school and qualify as an Indiana resident (IC 20-36-3-8). This money can be used to cover the costs of teachers, materials, exam fees, and any other fees associated with implementing the program. Results from the administrative interviews suggest that government policy and incentives do not necessarily drive the presence of AP courses in the selected school, although the administration is aware of the state mandate. Instead, during our discussions, the principal spoke more about offering AP, IB, and dual credit coursework more as a means of providing rigorous learning opportunities for the students.

Parent and Teacher Expectations

Research shows that parents have the greatest influence in determining student coursework, both positively and negatively (JBHE Foundation, 2005; Tucker, 2008; Attewell, 2001). College entrance is oftentimes a large factor in determining AP coursework for the potential gain of early college credit. Research also shows that the labor market may also play an important role in how parents influence their student's

coursework. A student's educational outcomes are closely related to potential earnings later than life (Kelly, 2012), which could explain why some parents push their students to take AP courses. With no parent surveys completed, it is difficult to say to what degree college entrance and the labor market influence parent expectations, but student surveys indicated that most students felt they were meeting parental expectations in their coursework. The principal also commented during his interview that most students spend a lot of time with their families.

Teachers also influence student decisions regarding coursework. Research in this area is often focused on unconscious bias, student tracking, and student performance with the all too familiar ending that students meet teacher expectations, whether high or low (Rubie-Davies, 2010; Adelabu, 2007; Belfi, Goos, De Fraine, & Van Damme, 2012). Preliminary results from the teacher survey did not show a bias among the provided anecdotal school situations as it pertained to gender, race, or socioeconomic status. Instead, teachers wrote about student qualities that were necessary to complete an AP course, as well as, how they would nurture those who showed potential. Additionally, the principal spoke about the Student Resource Time (SRT) program that matches students with teacher mentors for their entire four years of high schools. Results from a recently completed high school survey of student engagement (HSSE) showed that 67.7% of the students at the selected high school had had discussions with their teachers regarding their coursework, confirming that teacher expectations influence students decisions.

Major Findings

RQ 1

The first research question analyzed the participation rates within and among the demographic groups of gender, race, and socioeconomic status. Findings of this study tend to confirm research trends in Advanced Placement courses. The majority of participants at the selected school are White females, who are not eligible to receive free or reduced lunch. The small sample size, however, is severely unbalanced in race and moderately unbalanced in gender and SES (Table 6). As such, it is difficult to draw any definitive conclusions; however, the pattern at this Indiana high school does follow commonly reported research patterns in AP participation.

RQ 2

The second research question examines how students' demographics and/or motivational patterns further shape their participation in Advanced Placement classes. Results from logistic regression analyses showed that neither gender nor SES have a significant effect on predicting AP participation in high school seniors. An independent t-test did show a significant effect of race as a predictor of AP participation when focusing solely on the White and Hispanic groups ($p = .37$). Because of the small, unbalanced sample size, a non-parametric two independent samples test was conducted to confirm the significance found in the t-test.

When removing the demographic groups and focusing only on motivational patterns, three constructs test at the significant level for predicting AP participation: expectations, self-concept of ability, and utility value (Table 14). Parent and teacher expectations have been previously discussed in this chapter in reference to how

expectational levels from parents and teachers might be influenced from other sources (i.e. college entrance, labor market, student performance, etc.), so the significance here was anticipated. However, a logistic regression analysis shows that there is a negative effect of expectations on AP participation.

Self-concept of ability, as defined in chapter two, refers to one's self-concept of how good one is at a particular task, either individually or compared to others, as well as how successful one thinks he or she will be in the chosen activity (Yoon, Eccles, & Wigfield, 1996). The positive effect of this construct predicts that students with a high self-concept of ability are 15.703 times more likely to take an AP class. The utility value predictor also shows significance, but has a negative effect on AP participation. This means that students who do not see the usefulness or relevance of an AP class are less likely to participate in one. In sum, self-concept of ability is the strongest and only positive predictor of AP participation when demographics are removed from the analysis.

RQ 3

The third research question examines specific strategies in place at the school level to help influence and promote AP participation among all racial, SES, and gender groups within Indiana high schools. Answers provided on the teacher surveys indicated that teachers look for specific qualities in students when suggesting participation in the AP program. Race, gender, and socioeconomic status do not appear to factor into those decisions. School programs, such as SRT, discussed previously in this chapter, promote teacher mentoring of students during their four years in high school. A teacher mentors the same students each year to build a trusting relationship that can positively influence

student decision-making. Likewise, teachers informally encourage students to continue into an AP class if they are in the prerequisite course.

The high school, in general, has a strong mission towards rigorous coursework for its students and offers a variety of pathways in this area. While the AP program is not a focus for the school, the attitude towards learning and appreciating the value of an education is noticeable in both teacher and administrator responses to questions. Analyses provided in this study show that equity gaps are present in the AP program, but a comparative study of participation rates in the school's IB program could provide a broader picture of how the school is reaching all demographic groups to promote rigorous coursework.

Implications for Action

Recommendations for practice

Identified within this study as the strongest predictor of AP participation, it is crucial for high schools to implement strategies that promote and positively influence students' self-concept of ability (Table 14). Framed within the Expectancy Value Theory, self-concept of ability addresses two pieces of an individual's perception regarding one's level of competence and one's ability for potential success within a selected task (Pesu, Aunola, Viljarnant, & Nurmi, 2016). As such, high schools must consider how to foster this motivational construct within both the present and future tenses.

Perhaps the most obvious recommendation for high schools, then, would be the development and implementation of criteria for entrance into an AP course. As discussed in earlier chapters, entrance criteria often differ between schools, if it exists at all

(Franklin, 1965; Rothschild, 1999). Providing honest, transparent guidelines for students, parents, and teachers to consider prior to AP enrollment could increase AP participation rates while also guiding students towards meaningful class selection. For example, if criterion for the AP Chemistry course requires a grade of B or higher in the prerequisite science and math courses, then a student could confidently assess his or her aptitude for the course, as well as the possibility for success in additional or future coursework. Additionally, schools could create AP pathways in which students must qualify to pursue this particular educational track.

A continuous review process of student class performance could also build an individual's self-concept of ability. In this process, schools create a performance review system that tracks students through their coursework. Ideally, it would catch students who are exceeding expectations in non-AP classes, who would then be encouraged by faculty to enroll in an AP course. Repeating this review process at the end of each grading period would also include students who have transferred into the school after the initial registration period.

The implementation of a teacher-student mentor program provides a practical and effective way to build trusting relationships in which teachers can positively guide students down an appropriate and individualized educational path, which could easily include AP coursework. Research confirms that teachers influence student motivation and have an “impact on passing the values to adolescents that studying is useful and important to help achieve their goals” (Fan, 2011). Likewise, administrative support to teachers through encouraging professional development opportunities provided by the Advanced Placement Program could serve to increase the number of teachers who are

qualified to teach the rigorous courses. Funding, even limited, would serve to show administrative support for continuous learning among faculty and demonstrate to students the importance placed on the AP program.

Recommendations for future research

The new data for this study was limited to the results of one Indiana public high school. More research is needed in the State of Indiana to accurately measure if schools are working to lessen the equity gaps in AP participation, or if they are offering them solely due to the legislative mandates. For schools working towards lower equity gaps, a comprehensive study to accumulate implemented strategies could serve to assist schools who struggle in this area.

Further research should also be conducted on how effectively the Advanced Placement program is supporting schools in promoting their coursework. Do professional development opportunities offered through the College Board for AP teachers impact how schools implement the programs? A demographic study of who is attending AP professional development workshops and conferences would be helpful in determining which schools are likely to benefit from those opportunities.

It would also be beneficial to compare AP participation in schools to other curricular pathways within those schools, such as International Baccalaureate, Dual Credit, and Advanced College Placement programs. The perception of value between a potential college credit and a guaranteed credit could greatly impact results between programs. Comparing schools similar in demographics, size, and community would remove exterior variables that might also influence results.

Using seven predictors was not constructive in narrowing down influences on student participation in AP classes. With strong correlation between several of the constructs, studying fewer predictors, or combining them, could provide data that is easier to analyze and potentially eliminate the data-based multicollinearity.

Summary

Racial, socioeconomic, and gender gaps exist in Advanced Placement course participation, despite the consistent increase in availability. Several studies have shown that student demographic backgrounds, along with factors such as self-concept of ability, social consequence, and utility value, can influence a student's decision to pursue the AP pathway. This study highlighted the racial, socioeconomic, and gender gaps present in Advanced Placement class participation in Indiana high schools during the 2014-2015 school year and attempted to describe why certain demographic groups opt to participate in AP classes and others do not. The perceived academic benefit of AP classes in reference to students' intrinsic motivation and parental expectations, as well as other potential factors of influence, was researched through surveys and interviews. This study also explored potential explanations for gaps among socioeconomic peers, and further explored educational attitudes and practices of one Indiana high school that is not successfully minimizing the racial, socioeconomic, and gender gaps.

It is apparent that students, despite their demographics, are subject to an assortment of influences, both internal and external, while in high school. Specific to this study, self-concept of ability, perception of parent and teacher expectations, and utility value are the greatest predictors of AP participation among students, regardless of gender and socioeconomic status. Applied to the general concept of participation, self-concept

of ability showed a positive effect, while the expectations and utility value predictors indicated a negative effect. When applied directly to choosing to participate in an AP class, self-concept of ability showed a negative effect, while the expectations and utility value predictors indicated a positive effect. Race was also shown to have an effect on AP participation for students who selected either White or Hispanic, but that was only after other racial selections were removed.

The school's approach to promoting the AP program through teacher recommendation and informal student discussions is not influencing a high number of participants (Table 3). The Indiana high school selected for this study promotes four separate educational pathways to varying degrees to their student body: (a) Advanced Placement program; (b) International Baccalaureate (IB) program; (c) dual credit enrollment options; and (d) Advanced College Placement (ACP). The emphasis placed on the IB program is considerably more in-depth than the AP program. If the same approach were applied to the AP program, it is possible that enrollment would be higher and equity gaps would be lessened. Information gleaned from this study through the administrative perspective highlights an alternative reason that AP equity gaps might exist. With several Indiana high schools offering more than one educational pathway, students must select the program that will provide them with the best opportunity to reach their scholastic goals. It is reasonable that the AP program would not be the best fit for all students.

Students participating in AP classes in Indiana follow the national trends reported by College Board (2014b). The majority of students are White and female and do not qualify for free or reduced lunch at school per federal regulation guidelines. This trend is

also mirrored in the Indiana high school that served as the focus of this study. Identifying the barriers that lie between a student and AP participation may not be as simple as narrowing predictors down to demographic attributes or motivational patterns.

Regardless, the numbers cannot be ignored. Only having a philosophical understanding of equity gaps with the AP program will not fix it. Researchers and educators must turn their focus to the identification and implementation of strategies that will positively promote and impact equity within the program.

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APPENDIX A – STUDENT SURVEY

Q1 You must agree to participate to continue this survey.

- ☐ I agree to participate in this study.
- ☐ I do not agree to participate in this study.

Q2 What is the name of your school?

Q3 Are you currently enrolled in one or more Advanced Placement (AP) classes?

- ☐ Yes
- ☐ No

Q4 Did you take an AP class during 9th, 10th, or 11th grade?

- ☐ Yes
- ☐ No

Q5 Please select all AP courses you have taken during high school and indicate the year it was taken.

	9th	10th	11th	12th
AP Research	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Seminar	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Art History	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Music Theory	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Studio Art: 2-D Design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Studio Art: 3-D Design	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Studio Art: Drawing	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP English Language & Composition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP English Literature & Composition	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Comparative Government & Politics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP European History	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Human Geography	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Macroeconomics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Microeconomics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Psychology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP U.S. Government & Politics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP U.S. History	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP World History	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Calculus AB	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Calculus BC	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Computer Science A	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Computer Science Principles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Statistics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Biology	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Chemistry	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Physics B	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Physics C: Electricity & Magnetism	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Physics C: Mechanics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

AP Physics 1: Algebra-Based	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Physics 2: Algebra-Based	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Chinese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP French	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP German	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Italian	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Japanese	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Latin	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Spanish Language	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
AP Spanish Literature	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q6 Why did you stop taking AP classes?

Q7 Why did you choose to not take an AP course during high school?

Q8 Why is this your first year taking an AP course?

Q9 Please rate the degree to which you agree with the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
Pursuing AP classes is very appealing to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would avoid participating in AP classes if it meant that other students would think I know a lot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am doing as well in my AP classes as my parents want me to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I value the prestige that comes with completing an AP class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q10 If you were to list all the students from best to worst in your AP classes, where would you put yourself?

- ☐ The best
- ☐ Moderately better
- ☐ Slightly better
- ☐ About the same
- ☐ Slightly worse
- ☐ Moderately worse
- ☐ Much worse

Q11 Please rate the degree to which you agree with the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I like the challenge of doing the work required to complete an AP class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Completing an AP class is important in allowing me to show that I am competent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
One of my goals in my AP classes is to avoid looking smarter than other kids.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy learning from individuals who are experts in their field during my AP classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q12 To do well in my classes, I have to work:

- ☐ Much harder in my other subjects than in my AP class
- ☐ Somewhat harder in my other subjects than in my AP class
- ☐ About the same
- ☐ Somewhat harder in my AP classes than my other subjects
- ☐ Much harder in my AP classes than my other subjects

Q13 Please rate the degree to which you agree with the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I think that completing an AP class is important in allowing me to attain a high sense of self-worth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is very important to me that I do not look smarter than others in my AP classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The challenge of AP coursework is exciting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I have something to prove to myself by completing an AP class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q14 How well do you expect to do in your AP classes this year?

- ☐ Far above average
- ☐ Moderately above average
- ☐ Slightly above average
- ☐ Average
- ☐ Slightly below average
- ☐ Moderately below average
- ☐ Far below average

Q21 Please select the answer that best represents your feelings.

	Extremely important	Very important	Moderately important	Neutral	Slightly important	Low importance	Not at all important
For me, being successful at AP classwork is	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Some students believe that it is more important to be better at one subject or activity than another.							
Compared to most of your other activities, how important is it to you to be successful at your AP classes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q22 Please select your gender:

- ☐ Male
☐ Female

Q23 Please select your race:

- ☐ White
☐ Black or African American
☐ American Indian or Alaska Native
☐ Asian or Asian American
☐ Native Hawaiian or Pacific Islander
☐ Hispanic
☐ Multiracial

Q24 Please select the statement that is true for you:

- ☐ I am eligible to receive free or reduced lunch at school.
- ☐ I am NOT eligible to receive free or reduced lunch at school.
- ☐ I do not know if I am eligible to receive free or reduced lunch at school.

Q25 Please rate the degree to which you agree with the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
Pursuing school is very appealing to me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I would avoid participating in classes if it meant that other students would think I know a lot.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am doing as well in my classes as my parents want me to do.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I value the prestige that comes with completing a class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q26 If you were to list all the students from best to worst in your classes, where would you put yourself?

- ☐ The best
- ☐ Moderately better
- ☐ Slightly better
- ☐ About the same
- ☐ Slightly worse
- ☐ Moderately worse
- ☐ Much worse

Q27 Please rate the degree to which you agree with the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I like the challenge of doing the work required to complete a class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Completing a class is important in allowing me to show that I am competent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
One of my goals in my classes is to avoid looking smarter than other kids.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I enjoy learning from individuals who are experts in their field during my classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q28 To do well in my classes, I have to work:

- ☐ Much harder in my other subjects than in my AP class
- ☐ Somewhat harder in my other subjects than in my AP class
- ☐ About the same
- ☐ Somewhat harder in my AP classes than my other subjects
- ☐ Much harder in my AP classes than my other subjects

Q29 Please rate the degree to which you agree with the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I think that completing a class is important in allowing me to attain a high sense of self-worth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is very important to me that I do not look smarter than others in my classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The challenge of coursework is exciting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel that I have something to prove to myself by completing a class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q30 How well do you expect to do in your classes this year?

- ☐ Far above average
- ☐ Moderately above average
- ☐ Slightly above average
- ☐ Average
- ☐ Slightly below average
- ☐ Moderately below average
- ☐ Far below average

Q33 Please rate the degree to which you agree with the following statements.

[illegible]

Q34 Please select the answer that best represents how hard you have to work in each situation listed below.

[illegible]

Q35 Please rate the degree to which you agree with the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
Completing classes is important in enabling me to feel successful.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If other students found out I did well on a test, I would tell them it was just luck even if that was not the case.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am excited about the idea of completing my classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q36 Please the answer that best represents your opinion regarding your classes.

	Extremely useful	Moderately useful	Slightly useful	Neither useful nor useless	Slightly useless	Moderately useless	Extremely useless
In general, how useful is what you learn in class?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Some students find what they learn in one subject or activity is more useful than what they learn in another.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Compared to most of your other activities, how useful is what you learn in class?							

APPENDIX B – PARENT SURVEY

Q1 You must agree to participate to continue this survey.

- ☐ I agree to participate in this study.
- ☐ I do not agree to participate in this study.

Q2 What is the name of your child's high school?

Q3 Is your child currently enrolled in one or more Advanced Placement (AP) classes?

- ☐ Yes
- ☐ No

Q4 Did your child take one or more AP classes during 9th, 10th, or 11th grade?

- ☐ Yes
- ☐ No

Q5 Why did your child stop taking AP classes?

Q6 Why did your child choose to not take an AP course during high school?

Q7 Why is this your child's first year taking an AP course?

Q8 Please rate the degree to which you agree with the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
Pursing school is very appealing to this child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If my child were good at classwork, s/he would try to do his/her work in a way that did not show it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This child enjoys learning from individuals who were experts in their fields during class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This child feels that completing classes is a necessary part of what will make him/her feel good about himself/herself in the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The challenge of classwork is exciting for this child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q9 Compared with other children, how would you evaluate this child's performance in class?

- ☐ Much better
- ☐ Moderately better
- ☐ Slightly better
- ☐ About the same
- ☐ Slightly worse
- ☐ Moderately worse
- ☐ Much worse

Q12 To do well in class, this child has to work...

- ☐ Much harder in more advanced classes than in other classes
- ☐
- ☐
- ☐ About the same
- ☐
- ☐
- ☐ Much harder in other classes than in more advanced classes

Q13 Compared with other children, how difficult is succeeding in a class for this child?

- ☐ Much easier than for other children
- ☐ Moderately easier than for other children
- ☐ Slightly easier than for other children
- ☐ About the same
- ☐ Slightly more difficult than for other children
- ☐ Moderately more difficult than for other children
- ☐ Extremely more difficult than for other children

Q14 Please rate the degree to which you agree with the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
If this child did well on an assignment, s/he would not want other students to see his/her grade.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This child values the prestige that comes with completing a class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This child enjoys advancing his/her knowledge by exploring new and challenging ideas in class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Completing all of the work necessary to meet class requirements makes this child feel good about himself/herself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This child thinks that completing classes will allow him/her to attain a high sense of self-worth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q15 Compared with other children, how much innate ability or talent does this child have in academics?

- ☐ A lot more than other children
- ☐ Moderately more than other children
- ☐ Slightly more than other children
- ☐ About the same
- ☐ Slightly less than other children
- ☐ Moderately less than the other children
- ☐ A lot less than other children

Q16 How much does this child like being successful in class?

- ☐ Likes a great deal
- ☐ Likes a moderate amount
- ☐ Likes a little
- ☐ Neither likes nor dislikes
- ☐ Dislikes a little
- ☐ Dislikes a moderate amount
- ☐ Dislikes a great deal

Q17 Please rate the degree of importance, according to your beliefs, to the following questions.

	Extremely important	Very important	Moderately important	Neutral	Somewhat important	Very low importance	Not at all important
How important is it to you that that this child do well in class?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How important is academic success to this child?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q18 For this year, how well is this child fulfilling your expectations for classwork?

- ☐ Far exceeds expectations
- ☐ Moderately exceeds expectations
- ☐ Slightly exceeds expectations
- ☐ Equals expectations
- ☐ Slightly short of expectations
- ☐ Moderately short of expectations
- ☐ Far short of expectations

Q20 How good is this child at classwork?

- ☐ Extremely good
- ☐ Moderately good
- ☐ Slightly good
- ☐ Neither good nor bad
- ☐ Slightly bad
- ☐ Moderately bad
- ☐ Extremely bad

Q21 How useful do you think this child's classes will be to him/her in the future?

- ☐ Extremely useful
- ☐ Moderately useful
- ☐ Slightly useful
- ☐ Neither useful nor useless
- ☐ Slightly useless
- ☐ Moderately useless
- ☐ Extremely useless

Q23 Please rate the degree of effort you feel your child applies to school.

	Exceptionally hard effort	Excellent effort	Very good effort	Good effort	Fair effort	Poor effort	No effort at all
How hard would this child have to try to do well in class?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How hard does this child try at being successful in class?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How hard does this child have to try to get good grades in class?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How hard does this child have to study for tests to get good grades?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q40 Please select your child's gender:

- ☐ Male
☐ Female

Q41 Please select your child's race:

- ☐ White
☐ Black or African American
☐ American Indian or Alaska Native
☐ Asian or Asian American
☐ Native Hawaiian or Pacific Islander
☐ Hispanic
☐ Multiracial

Q42 Please select the statement that is true for your child. The provided chart will assist in answering this question.

- ☐ My child qualifies for free and reduced lunch at school.
☐ My child does not qualify for free and reduced lunch at school.

Q24 Please rate the degree to which you agree with the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
Pursing AP classes is very appealing to this child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
If this child were good at AP classwork, s/he would try to do his/her work in a way that did not show it.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This child enjoys learning from individuals who were experts in their fields during AP class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This child feels that completing AP classes is a necessary part of what will make him/her feel good about himself/herself in the future.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The challenge of AP classwork is exciting for this child.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q25 Compared with other children, how would you evaluate this child's performance in AP classes?

- ☐ Much better
- ☐ Moderately better
- ☐ Slightly better
- ☐ About the same
- ☐ Slightly worse
- ☐ Moderately worse
- ☐ Much worse

Q28 To do well in AP classes, this child has to work...

- ☐ Much harder in AP classes than in other classes
- ☐
- ☐
- ☐ About the same
- ☐
- ☐
- ☐ Much hard in other classes than in AP classes

Q29 Compared with other children, how difficult is succeeding in an AP class for this child?

- ☐ Much easier than for other children
- ☐ Moderately easier than for other children
- ☐ Slightly easier than for other children
- ☐ About the same
- ☐ Slightly more difficult than for other children
- ☐ Moderately more difficult than for other children
- ☐ Extremely more difficult than for other children

Q30 Please rate the degree to which you agree with the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
If this child did well on an AP assignment, s/he would not want other students to see his/her grade.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This child values the prestige that comes with completing an AP class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This child enjoys advancing his/her knowledge by exploring new and challenging ideas in AP class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Completing all of the work necessary to meet AP class requirements makes this child feel good about himself/herself.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This child thinks that completing AP classes will allow him/her to attain a high sense of self-worth.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q31 Compared with other children, how much innate ability or talent does this child have in academics?

- ☐ A lot more than other children
- ☐ Moderately more than other children
- ☐ Slightly more than other children
- ☐ About the same
- ☐ Slightly less than other children
- ☐ Moderately less than the other children
- ☐ A lot less than other children

Q32 How much does this child like being successful in AP class?

- ☐ Likes a great deal
- ☐ Likes a moderate amount
- ☐ Likes a little
- ☐ Neither likes nor dislikes
- ☐ Dislikes a little
- ☐ Dislikes a moderate amount
- ☐ Dislikes a great deal

Q33 Please rate the degree of importance, according to your beliefs, to the following questions.

	Extremely important	Very important	Moderately important	Neutral	Somewhat important	Very low importance	Not at all important
How important is it to you that that this child do well in AP classes?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How important is academic success to this child?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q34 For this year, how well is this child fulfilling your expectations for AP classwork?

- ☐ Far exceeds expectations
- ☐ Moderately exceeds expectations
- ☐ Slightly exceeds expectations
- ☐ Equals expectations
- ☐ Slightly short of expectations
- ☐ Moderately short of expectations
- ☐ Far short of expectations

Q35 Please rate the degree to which you agree with the following statements.

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
The child likes the challenge of doing the work required to complete an AP class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
It is very important to this child that s/he does not look smarter than others in AP class.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Completing AP classes is important in allowing this child to show that s/he is competent.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
One of this child's goals in AP class is to avoid looking smarter than other kids.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This child feels that s/he has something to prove to himself/herself by completing AP classes.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
This child would not volunteer to answer a question in AP class if s/he thought other student would think s/he was smart.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q36 How good is this child at AP classwork?

- ☐ Extremely good
- ☐ Moderately good
- ☐ Slightly good
- ☐ Neither good nor bad
- ☐ Slightly bad
- ☐ Moderately bad
- ☐ Extremely bad

APPENDIX C – TEACHER SURVEY

Q1.1 You must agree to participate to continue this survey.

- ☐ I agree to participate in this study. (1)
- ☐ I do not agree to participate in this study. (2)

If I do not agree to participate... Is Selected, Then Skip To End of Survey

Q2.1 What grade(s) do you currently teach? (Check all that apply.)

- ☐ 9th (1)
- ☐ 10th (2)
- ☐ 11th (3)
- ☐ 12th (4)

Q2.2 Do you have experience teaching one or more Advanced Placement (AP) classes?

- ☐ Yes (1)
- ☐ No (2)

Q2.3 What is your role in recommending students for Advanced Placement classes?

Q3.1 Stephen is a highly motivated high school student. He has been described as inquisitive, creative, and studious. Teachers have noted that Stephen contributes to classroom discussions consistently and always turns in assignments on time. Many view him as a student leader. His soccer coach was not surprised when the team selected him as their captain. Stephen plans to attend college after high school and major in a STEM field. How likely are you to recommend this student for an AP class?

- ☐ Extremely likely (1)
- ☐ Moderately likely (2)
- ☐ Slightly likely (3)
- ☐ Neither likely nor unlikely (4)
- ☐ Slightly unlikely (5)
- ☐ Moderately unlikely (6)
- ☐ Extremely unlikely (7)

Q3.2 Stephanie is a highly motivated high school student. She has been described as inquisitive, creative, and studious. Teachers have noted that Stephanie contributes to classroom discussions consistently and always turns in assignments on time. Many view her as a student leader. Her soccer coach was not surprised when the team selected her as their captain. Stephanie plans to attend college after high school and major in a STEM field. How likely are you to recommend this student for an AP class?

- ☐ Extremely likely (1)
- ☐ Moderately likely (2)
- ☐ Slightly likely (3)
- ☐ Neither likely nor unlikely (4)
- ☐ Slightly unlikely (5)
- ☐ Moderately unlikely (6)
- ☐ Extremely unlikely (7)

Q4.1 Briefly state why you are likely or unlikely to recommend this student for an AP class.

Q5.1 Shamika is often bored with school, but does enjoy reading and writing. Because of this, English is her best subject and usually takes priority over other classes. Recent scores on achievement tests reflect that Shamika is at grade level achievement for English, but above grade level in mathematics. Her classroom performance in mathematics, however, is lower than one would expect. How likely are you to recommend this student for an AP mathematics class?

- ☐ Extremely likely (1)
- ☐ Moderately likely (2)
- ☐ Slightly likely (3)
- ☐ Neither likely nor unlikely (4)
- ☐ Slightly unlikely (5)
- ☐ Moderately unlikely (6)
- ☐ Extremely unlikely (7)

Q5.2 Juanita is often bored with school, but does enjoy reading and writing. Because of this, English is her best subject and usually takes priority over other classes. Recent scores on achievement tests reflect that Juanita is at grade level achievement for English, but above grade level in mathematics. Her classroom performance in mathematics, however, is lower than one would expect. How likely are you to recommend this student for an AP mathematics class?

- ☐ Extremely likely (1)
- ☐ Moderately likely (2)
- ☐ Slightly likely (3)
- ☐ Neither likely nor unlikely (4)
- ☐ Slightly unlikely (5)
- ☐ Moderately unlikely (6)
- ☐ Extremely unlikely (7)

Q5.3 Susan is often bored with school, but does enjoy reading and writing. Because of this, English is her best subject and usually takes priority over other classes. Recent scores on achievement tests reflect that Susan is at grade level achievement for English, but above grade level in mathematics. Her classroom performance in mathematics, however, is lower than one would expect. How likely are you to recommend this student for an AP mathematics class?

- ☐ Extremely likely (1)
- ☐ Moderately likely (2)
- ☐ Slightly likely (3)
- ☐ Neither likely nor unlikely (4)
- ☐ Slightly unlikely (5)
- ☐ Moderately unlikely (6)
- ☐ Extremely unlikely (7)

Q5.4 Yuki is often bored with school, but does enjoy reading and writing. Because of this, English is her best subject and usually takes priority over other classes. Recent scores on achievement tests reflect that Yuki is at grade level achievement for English, but above grade level in mathematics. Her classroom performance in mathematics, however, is lower than one would expect. How likely are you to recommend this student for an AP mathematics class?

- ☐ Extremely likely (1)
- ☐ Moderately likely (2)
- ☐ Slightly likely (3)
- ☐ Neither likely nor unlikely (4)
- ☐ Slightly unlikely (5)
- ☐ Moderately unlikely (6)
- ☐ Extremely unlikely (7)

Q5.5 Kalea is often bored with school, but does enjoy reading and writing. Because of this, English is her best subject and usually takes priority over other classes. Recent scores on achievement tests reflect that Kalea is at grade level achievement for English, but above grade level in mathematics. Her classroom performance in mathematics, however, is lower than one would expect. How likely are you to recommend this student for an AP mathematics class?

- ☐ Extremely likely (1)
- ☐ Moderately likely (2)
- ☐ Slightly likely (3)
- ☐ Neither likely nor unlikely (4)
- ☐ Slightly unlikely (5)
- ☐ Moderately unlikely (6)
- ☐ Extremely unlikely (7)

Q6.1 Briefly state why you are likely or unlikely to recommend this student for an AP mathematics class.

Q7.1 Wyatt is a student from an affluent family, who would rather play sports than study for class. Teachers describe him as a smart kid with a lot of untapped potential and are not surprised when assignments only meet minimal requirements. Wyatt's sense of humor ensures that he gets along with most of his teachers, but many would like to see him take his classes more seriously. How likely are you to recommend this student for an AP class?

- ☐ Extremely likely (1)
- ☐ Moderately likely (2)
- ☐ Slightly likely (3)
- ☐ Neither likely nor unlikely (4)
- ☐ Slightly unlikely (5)
- ☐ Moderately unlikely (6)
- ☐ Extremely unlikely (7)

Q7.2 Wyatt is a student from a low-income family, who would rather play sports than study for class. Teachers describe him as a smart kid with a lot of untapped potential and are not surprised when assignments only meet minimal requirements. Wyatt's sense of humor ensures that he gets along with most of his teachers, but many would like to see him take his classes more seriously. How likely are you to recommend this student for an AP class?

- ☐ Extremely likely (1)
- ☐ Moderately likely (2)
- ☐ Slightly likely (3)
- ☐ Neither likely nor unlikely (4)
- ☐ Slightly unlikely (5)
- ☐ Moderately unlikely (6)
- ☐ Extremely unlikely (7)

Q8.1 Briefly describe why you are likely or unlikely to recommend this student for an AP class.

Q9.1 Please select your race:

- ☐ White (1)
- ☐ Black or African American (2)
- ☐ American Indian or Alaska Native (3)
- ☐ Asian or Asian American (4)
- ☐ Native Hawaiian or Pacific Islander (5)
- ☐ Hispanic (6)
- ☐ Multiracial (7)

Q9.2 Please select your gender:

- ☐ Male (1)
- ☐ Female (2)

APPENDIX D – SCHOOL LEADERSHIP INTERVIEW PROTOCOL

Thank you for taking the time to meet for this interview today. In this interview, I will ask you questions concerning your school's Advanced Placement program. As you answer the questions, please respond openly and honestly with me. The information collected in this interview will be used in my dissertation. You and your answers will remain confidential and anonymous in the reporting. Do you have any questions about the interview process before I begin?

1. How long have you been an administrator at this school?
2. What is your primary academic goal for the students attending this school?
3. How many Advanced Placement courses are offered at your school?
4. Do your AP teachers attend professional development specific to AP?
 - a. Does the school provide funding?
 - i. If yes, what type of funding (full, partial)?
 - ii. If no, why not?
5. Does your school employ a screening process for AP class?
 - a. If yes, what are the components of that process?
 - b. If no, why not?
6. What percentage of your students would you estimate participate in the AP program at your school?
7. What type of student would you say typically participates in an AP class?
8. Do you feel that your staff influences whether or not a student chooses to participate in an AP class?
 - a. If yes, how strong is that influence, in your opinion?
 - b. If no, why do you think that is? Do you feel it should be different?
9. What type of student do you feel benefits most from an AP class?
 - a. What are those benefits?
10. To what extent do you feel the following demographics factor into a student's decision to participate in an AP class?
 - a. race
 - b. socioeconomic status

c. gender

11. What type of student do you think is more likely to take an AP class?
12. Who or what do you feel has the greatest influence on whether or not a student participates in the AP program?
13. What strategies are in place at your school to promote AP participation?
14. Do you feel that current strategies are effective in promoting AP participation among all demographic groups?
 - a. If yes, what evidence supports this?
 - b. If no, what would you do differently?

Thank you for your time today. I appreciate your willingness to assist me with my doctoral study. Before we conclude, is there anything you would like to add?